I

(Acts whose publication is obligatory)

Annexes A and B to Council Directive 96/49/EC (*) **as announced in Commission Directive 2001/6/EC** (**) **adapting for the third time to technical progress Council Directive 96/49/EC on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail** [1]

(*) OJ L 235, 17.9.1996, p. 25.
(**) OJ L 30, 1.2.2001, p. 42.
[1] Text with EEA relevance.

Part 1

GENERAL REQUIREMENTS

CHAPTER 1.1

Scope and Applicability

1.1.1. *Structure*

The Annex to this Directive is grouped into seven parts. Each part is subdivided into chapters and each chapter into sections and sub-sections.

Within each part the number of the part is included with the numbers of the chapters, sections and sub-sections, for example Part 4, Chapter 2, Section 1 is numbered '4.2.1'.

1.1.2. *Scope*

For the purposes of Article 3 of this Directive, the Annex covers:

(a) dangerous goods which are barred from carriage;

(b) dangerous goods which are authorized for carriage and the conditions attaching to them (including exemptions) particularly with regard to:

— classification of goods, including classification criteria and relevant test methods;

— use of packagings (including mixed packing);

— use of tanks (including filling);

— consignment procedures (including marking and labelling of packages and means of transport as well as documentation and information required);

— requirements concerning the construction, testing and approval of packagings and tanks;

— use of means of transport (including loading, mixed loading and unloading).

1.1.3. *Exemptions*

1.1.3.1. Exemptions related to the nature of the transport operation

The requirements laid down in this Directive do not apply to:

(a) the carriage of dangerous goods by private individuals where the goods in question are packaged for retail sale and are intended for their personal or domestic use or for leisure or sporting activities;

(b) the carriage of machinery or equipment not specified in this Directive and which happen to contain dangerous goods in their internal or operational equipment;

(c) carriage undertaken by enterprises which is ancillary to their main activity, such as deliveries to building or civil engineering sites, or in relation to surveying, repairs and maintenance, in quantities of not more than 450 litres per packaging and within the maximum quantities specified below.

Transport category	Substances or articles Packing group or classification code/group or UN No		Maximum total quantity per wagon or large container
0	Class 1:	1.1L/1.2L/1.3L/1.4L, UN No 0190 0	0
	Class 3:	UN No 3343	
	Class 4.2:	Substances belonging to Packing Group I	
	Class 4.3:	UN Nos 1183, 1242, 1295, 1340, 1390, 1403, 1928, 2813, 2965, 2968, 2988, 3129, 3130, 3131, 3134, 3148 and 3207	
	Class 6.1:	1051, 1613, 1614 and 3294	
	Class 6.2:	UN Nos 2814 and 2900 [Risk Groups 3 and 4]	
	Class 7:	Substances and articles of UN Nos 2912 to 2919, 2977, 2978, 3321 to 3333	
	Class 9:	UN Nos 2315, 3151 and 3152 and equipment or mixtures containing such substances	
	and empty uncleaned packagings having contained substances classified in this transport category		
1	Substances and articles belonging to Packing 20 Group I and not classified in transport category 0 and substances and articles of the following classes:		20
	Class 1:	1.1B to 1.1J (*)1.2B to 1.2J/1.3C/1.3G/1.3H/1.3J and 1.5D (*)	
	Class 2:	groups T, TC (*), TO, TF, TOC and TFC	
	Class 4.1:	UN Nos 3221 to 3224	
	Class 5.2:	UN Nos 3101 to 3104	
2	Substances and articles belonging to packing group II and not classified in transport categories 0, 1 or 4 and substances and articles of the following classes:		333
	Class 1:	1.4B to 1.4G and 1.6N	
	Class 2:	group F	
	Class 4.1:	UN Nos 3225 to 3230	
	Class 5.2:	UN Nos 3105 to 3110	
	Class 6.1:	substances and articles of packing group III	
	Class 6.2:	UN Nos 2814 and 2900 [risk group 2]	
	Class 9:	No 3245	
3	Substances and articles belonging to packing group III and not classified in transport categories 0, 2 or 4 and substances and articles of the following classes:		1 000
	Class 2:	groups A and O	
	Class 8:	UN Nos 2794, 2795, 2800 and 3028	
	Class 9:	UN Nos 2990 and 3072	
4	Class 1:	1.4S	unlimited
	Class 4.1:	UN Nos 1331, 1345, 1944, 1945, 2254 and 2623	
	Class 4.2:	UN Nos 1361 and 1362 of packing group III	
	Class 7:	UN Nos 2908 to 2911	
	Class 9:	UN No 3268	
	and empty, uncleaned packagings have contained dangerous goods, except for those classified in transport category		

(*) For UN Nos 0081, 0082, 0084, 0241, 0331, 0332, 0482, 1005 and 1017, the total maximum quantity per wagon or large container shall be 50 kg.

In the above table, 'maximum total quantity per wagon or large container' means:

— for articles, gross mass in kilograms (for articles of Class 1, net mass in kg of the explosive substance);

— for solids, liquefied gases, refrigerated liquefied gases and gases dissolved under pressure, net mass in kilograms;

— for liquids and compressed gases, nominal capacity of receptacles (see definition in section 1.2.1) in litres.

Where dangerous goods of different transport categories are carried in the same wagon, the sum of:

— the quantity of substances and articles of transport category 1 multiplied by 50;

— the quantity of substances and articles of transport category 1, listed in footnote (*) to the Table, multiplied by 20;

— the quantity of substances and articles of transport category 2 multiplied by 3; and

— the quantity of substances and articles of transport category 3 shall not exceed 1 000.

For the purposes of these requirements, dangerous goods exempted in accordance with 1.1.3.2 to 1.1.3.5 shall not be taken into account.

Carriage undertaken by such enterprises for their supply or external or internal distribution does not fall within the scope of this exemption.

(d) carriage undertaken by, or under the supervision of, the emergency services;

(e) emergency transport intended to save human lives or protect the environment provided that all measures are taken to ensure that such transport is carried out in complete safety.

NOTE For radioactive material, see 2.2.7.1.2.

1.1.3.2. Exemptions related to the carriage of gases

The requirements laid down in this Directive do not apply to the transport of:

(a) gases contained in the tanks of a vehicle, performing a transport operation and destined for its propulsion or for the operation of any of its equipment (e.g. refrigerating equipment);

(b) gases contained in the fuel tanks of vehicles transported. The fuel cock between the fuel tank and engine shall be closed and the electric contact open;

(c) gases of Groups A and O according to 2.2.2.1, if the pressure of the gas in the receptacle or tank at a temperature of 15 °C does not exceed 200 kPa (2 bar) and if the gas is completely in the gaseous state during carriage. This includes every kind of receptacle or tank, e.g. also parts of machinery and apparatus;

(d) gases contained in the equipment used for the operation of the vehicle (e.g. fire extinguishers or inflated pneumatic tyres, even as spare parts or as a load);

(e) gases contained in the special equipment of wagons and necessary for the operation of this special equipment during transport (cooling systems, fish-tanks, heaters, etc.) as well as spare receptacles for such equipment or uncleaned empty exchange receptacles, carried in the same wagon;

(f) uncleaned empty fixed pressure tanks which are carried on condition that they are hermetically closed; and

(g) gases contained in foodstuffs or beverages.

1.1.3.3. Exemptions related to the carriage of liquid fuels

The requirements of this Directive do not apply to the carriage of fuel contained in fuel tanks of a means of transport where it is destined for its propulsion or the operation of any of its equipment (e.g. cooling systems). The fuel cock between the engine and the fuel tank of motorcycles and pedal cycles with an auxiliary engine, whose tanks contain fuel, shall be closed during carriage. In addition, these motorcycles and pedal cycles with an auxiliary engine shall be loaded upright and secured against falling.

1.1.3.4. Exemptions related to special requirements or to dangerous goods packed in limited quantities

1.1.3.4.1. Certain special requirements of Chapter 3.3 exempt partially or totally the carriage of specific dangerous goods from the requirements of this Directive. The exemption applies when the special requirement is referred to in column 6 of Table A of Chapter 3.2 against the dangerous goods entry concerned.

1.1.3.4.2. Certain dangerous goods packed in limited quantities may be subject to exemptions provided that the conditions of Chapter 3.4 are met.

NOTE For radioactive material see 2.2.7.1.2.

1.1.3.5. Exemptions related to empty uncleaned packagings

Empty uncleaned packagings, including IBCs and large packagings, which have contained substances of Classes 2, 3, 4.1, 5.1, 6.1, 8 and 9 are not subject to the requirements of this Directive if adequate measures have been taken to nullify any hazard. Hazards are nullified if adequate measures have been taken to nullify all hazards of Classes 1 to 9.

1.1.4. *Applicability of other regulations*

1.1.4.1. General

1.1.4.1.1. The entry of dangerous goods into the territory of a Member State may be subject to regulations or prohibitions imposed for reasons other than safety during carriage. Such regulations or prohibitions shall be published in an appropriate form.

1.1.4.2. Carriage prior to or following maritime or air carriage

Packages, containers, portable tanks and tank-containers and wagons containing a full load of packages with the same dangerous goods, which do not entirely meet the packing, mixed packing, package marking and labelling or placarding and orange marking requirements of this Directive, but are in conformity with the requirements of the IMDG Code or the ICAO Technical Instructions may be accepted for carriage prior to or following maritime or air carriage subject to the following conditions:

(a) if the packages are not marked and labelled in accordance with this Directive, they shall bear markings and danger labels in accordance with the requirements of the IMDG Code or the ICAO Technical Instructions;

(b) the requirements of the IMDG Code or the ICAO Technical Instructions shall be applicable to mixed packing within a package;

(c) for carriage in a transport chain including maritime carriage, containers, portable tanks or tank-containers and wagons containing a full load of packages with the same dangerous goods shall be marked and labelled (placarded) in accordance with Chapter 5.3 of the IMDG Code, unless they are labelled (placarded) and bear an orange-coloured marking in accordance with Chapter 5.3 of this Directive.

For empty, uncleaned portable tanks and tank-containers, this requirement shall apply up to and including the subsequent transfer to a cleaning station.

This derogation does not apply in the case of goods classified as dangerous goods in Classes 1 to 8 of this Directive and considered as non-dangerous goods according to the applicable requirements of the IMDG Code or the ICAO Technical Instructions.

NOTE For the information in the consignment note, see 5.4.1.1.7; for the container packing certificate, see 5.4.2.

1.1.4.3. Use of portable tanks approved for maritime transport

Portable tanks which do not meet the requirements of Chapters 6.7 or 6.8, but which were built and approved before 1 January 2003 in accordance with the requirements (including the transitional requirements) of the IMDG Code (Amendment 29-98) may be used until 31 December 2009 provided that they meet the relevant test requirements of the IMDG Code (Amendment 29-98) and that the instructions given in Chapter 3.2, columns 12 and 13 of the IMDG Code (Amendment 30-00) are fully applied. They may be used after 31 January 2009 if they meet the relevant test requirements of the IMDG Code, provided that the instructions in Chapter 3.2, columns 10 and 11 and in Chapter 4.2 of this Directive are applied.

NOTE For the information in the consignment note, see 5.4.1.1.8.

1.1.4.4. Piggyback transport

Dangerous goods may also be carried in piggyback transport under the following conditions:

Vehicles and their contents handed over for piggyback transport shall meet the provisions of Directive 94/55/EC, as amended by Directive 2001/7/EC ([1]).

The following shall not be permitted:

— explosives of Class 1, compatibility group A (UN Nos 0074, 0113, 0114, 0129, 0130, 0135, 0224 and 0473);

— self-reactive substances of Class 4.1 requiring temperature control (UN Nos 3231 to 3240);

— organic peroxides of Class 5.2 requiring temperature control (UN Nos 3111 to 3120);

— sulphur trioxide at least 99,95 % pure, without inhibitor, carried in tanks (UN No 1829).

NOTE For the placarding of wagons used in piggyback transport, see 5.3.1.3. For the information in the consignment note and the instructions in writing required by 5.4.3 of Annex A to Directive 94/55/EC, see 5.4.1.1.9.

1.1.4.5. Carriage other than by rail

1.1.4.5.1. If the wagon carrying out a transport operation subject to the requirements of this Directive is conveyed over a section of the journey otherwise than by rail, then any national or international regulations which, on the said section, govern the carriage of dangerous goods by the mode of transport used for conveying the wagon shall alone be applicable to the said section of the journey.

1.1.4.5.2. Unless this would contravene the international Conventions governing the carriage of dangerous goods by the mode of transport used for conveying the wagon on the said section of the journey, the this Member States may agree to apply the requirements of this Directive to this section of the journey, supplemented, if they consider it necessary, by additional requirements. These agreements shall be notified to the Central Office by the Member State that initiated the agreement.

CHAPTER 1.2

Definitions and units of measurement

1.2.1. *Definitions*

NOTE 1. This section contains all general or specific definitions.

2. Terms contained within a definition in this section which are defined separately are printed in italics.

For the purposes of this Directive:

A

ADR means the European Agreement concerning the International Carriage of Dangerous Goods by Road, including all special agreements signed by those states involved in the transport operation.

Aerosol, see '**Aerosol dispenser**';

Aerosol dispenser means any non-refillable receptacle made of metal, glass or plastics, containing, under pressure, a gas or a mixture of gases, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state;

B

Bag means a flexible packaging made of paper, plastics film, textiles, woven material or other suitable material;

Battery wagon means a wagon containing elements which are linked to each other by a manifold and permanently fixed to a wagon. The following elements are considered to be elements of a battery wagon: cylinders, tubes, bundles of cylinders (also known as frames), pressure drums as well as tanks intended for gases of Class 2 with a capacity greater than 450 litres;

([1]) Commission Directive 2001/7/EC of 29 January 2001 adapting for the third time to technical progress Council Directive 94/55/EC on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road, OJ L 30, 1.2.2001, p. 43.

Biological/technical/chemical name means a name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose;

Body (for all categories of IBC other than composite IBCs) means the receptacle proper, including openings and closures, but does not include service equipment;

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics or other suitable material. Small holes for purposes of ease of handling or opening or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during carriage;

Bundle of cylinders (frame) means a transportable assembly of cylinders which are interconnected by a manifold and held firmly together;

C

Calculation pressure means a theoretical pressure at least equal to the test pressure which, according to the degree of danger exhibited by the substance being carried, may to a greater or lesser degree exceed the working pressure. It is used solely to determine the thickness of the walls of the shell, independently of any external or internal reinforcing device (see also 'Discharge pressure', 'Filling pressure', 'Maximum working pressure (gauge pressure)' and 'Test pressure');

NOTE For portable tanks, see Chapter 6.7.

Carriage means the change of place of dangerous goods, including stops made necessary by transport conditions and including any period spent by the dangerous goods in wagons, tanks and containers made necessary by traffic conditions before, during and after the change of place.

This definition also covers the intermediate temporary storage of dangerous goods in order to change the mode or means of transport (transshipment). This shall apply provided that transport documents showing the place of dispatch and the place of reception are presented on request and provided that packages and tanks are not opened during intermediate storage, except to be checked by the competent authorities;

Carriage in bulk means the carriage of unpackaged solids or articles in wagons or containers. The term does not apply to packaged goods nor to substances carried in tanks;

Carrier means the enterprise which carries out the transport operation with or without a transport contract;

Closed container means a completely enclosed container with a rigid roof, rigid side walls, rigid ends and floor. The term includes containers with an opening roof, where the roof is closed during carriage;

Closed wagon means a wagon with sides and a fixed or movable roof;

Closure means a device which closes an opening in a receptacle;

Collective entry means an entry for a well defined group of substances or articles (see 2.1.1.2, B, C and D);

Combination packaging means a combination of packagings for transport purposes, consisting of one or more inner packagings secured in an outer packaging in accordance with 4.1.3.1;

NOTE The 'inner' of a combination packaging is always termed the 'inner packaging', not the 'inner receptacle'. An example of such an 'inner packaging' is a glass bottle.

Competent authority means the authority or authorities or any other body or bodies designated as such in each State and in each specific case in accordance with domestic law;

Compliance assurance (radioactive material) means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the requirements of this Directive are met in practice;

Composite IBC with plastics inner receptacle means an IBC comprising structural equipment in the form of a rigid outer casing encasing a plastics inner receptacle together with any service or other structural equipment. It is so constructed that the inner receptacle and outer casing once assembled form, and are used as, an integrated single unit to be filled, stored, despatched or emptied as such;

Composite packaging (plastics material) is a packaging consisting of an inner plastics receptacle and an outer packaging (made of metal, fibreboard, plywood, etc.). Once assembled such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

NOTE See Note under 'Composite packagings (glass, porcelain or stoneware)'.

Composite packaging (glass, porcelain or stoneware) means a packaging consisting of an inner glass, porcelain or stoneware receptacle and an outer packaging (made of metal, wood, fibreboard, expanded plastics material etc.). Once assembled, such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

NOTE The 'inners' of 'composite packagings' are usually termed 'inner receptacles'. For example, the 'inner' of a 6HA1 composite packaging (plastics) is such an 'inner receptacle' since it is normally not designed to perform a containment function without its 'outer packaging', and is not therefore an 'inner packaging'.

Consignee means the consignee according to the contract for carriage. If the consignee designates a third party in accordance with the requirements applicable to the contract for carriage, this person shall be deemed to be the consignee within the meaning of this Directive. If carriage takes place without a contract for carriage, the enterprise which takes charge of the dangerous goods on arrival shall be deemed to be the consignee;

Consignment means any package or packages, or load of dangerous goods, presented by a consignor for carriage;

Consignor means the enterprise which dispatches dangerous goods either on its own behalf or for a third party. If carriage takes place under a contract for carriage, consignor means the consignor according to the contract for carriage;

Container means an article of transport equipment (lift van or other similar structure):

— of a permanent character and accordingly strong enough to be suitable for repeated use;

— specially designed to facilitate the carriage of goods, by one or more means of transport, without breakage of load;

— fitted with devices permitting its ready stowage and handling, particularly when being transshipped from one means of transport to another;

— so designed as to be easy to fill and empty (see also 'Large container' and 'Small container').

A swap body is a container which, in accordance with European Standard EN 283 (1991 edition) has the following characteristics:

— from the point of view of mechanical strength, it is only built for carriage on a wagon or a vehicle on land or by roll-on roll-off ship;

— it cannot be stacked;

— it can be removed from vehicles by means of equipment on board the vehicle and on its own supports, and can be reloaded;

NOTE The term container does not cover conventional packagings, IBCs, tank-containers or wagons.

Control temperature means the maximum temperature at which the organic peroxide or the self-reactive substance can be safely carried;

Critical temperature means the temperature at which procedures must be put into effect when there is a failure of the temperature control system;

NOTE This definition does not apply to gases of Class 2.

CSC means the International Convention for Safe Containers (Geneva, 1972) as amended and published by the International Maritime Organization (IMO), London;

Crate is an outer packaging with incomplete surfaces;

Cryogenic receptacle means a transportable thermally insulated receptacle for deeply refrigerated liquefied gases of a capacity of not more than 1 000 litres;

Cylinder means a transportable pressure receptacle of a capacity not exceeding 150 litres;

D

Dangerous goods means those substances and articles the carriage of which is prohibited by RID, or authorized only under the conditions prescribed therein;

Dangerous reaction means:

(a) combustion and/or evolution of considerable heat;

(b) evolution of flammable, asphyxiant, and/or toxic gases;

(c) the formation of corrosive substances;

(d) the formation of unstable substances; or

(e) dangerous rise in pressure (for tanks only);

Demountable tank means a tank designed to fit the special apparatus of the wagon but which can only be removed from it after dismantling their means of attachment;

Discharge pressure means the maximum pressure actually built up in the tank when it is being discharged under pressure (see also 'Calculation pressure', 'Filling pressure', 'Maximum working pressure (gauge pressure)' and 'Test pressure');

Drum means a flat-ended or convex-ended cylindrical packaging made out of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, e.g. round, taper-necked packagings or pail-shaped packagings. Wooden barrels and jerricans are not covered by this definition;

E

Enterprise means any natural person, any legal person, whether profit-making or not, any association or group of persons without legal personality, whether profit-making or not, or any official body, whether it has legal personality itself or is dependent upon an authority that has such personality;

F

Fibreboard IBC means a fibreboard body with or without separate top and bottom caps, if necessary an inner liner (but no inner packagings), and appropriate service and structural equipment;

Filler means any enterprise which loads dangerous goods into a tank (tank-vehicle, wagon with demountable tank, portable tank or tank-container) and/or into a wagon, large container or small container for carriage in bulk, or into a battery-wagon or MEGC;

Filling pressure means the maximum pressure actually built up in the tank when it is being filled under pressure (see also 'Calculation pressure', 'Discharge pressure', 'Maximum working pressure (gauge pressure)' and 'Test pressure');

Fixed tank means a tank having a capacity of more than 1 000 litres which is permanently attached to a wagon (which then becomes a tank-wagon) or is an integral part of the frame of such a wagon;

Flammable component (for aerosols and gas cartridges) is a gas which is flammable in air at normal pressure or a substance or a preparation in liquid form which has a flash-point less than or equal to 100 °C;

Flash-point means the lowest temperature of a liquid at which its vapours form a flammable mixture with air;

Flexible IBC means a body constituted of film, woven fabric or any other flexible material or combinations thereof, and if necessary, an inner coating or liner, together with any appropriate service equipment and handling devices;

Full load means a load originating from a single consignor for whom the use of a large container is exclusively reserved, and all loading procedures are carried out in accordance with the consignor's or the consignee's instructions.

NOTE The corresponding term for Class 7 is 'exclusive use' (see 2.2.7.2).

G

Gas means a substance which:

(a) at 50 °C has a vapour pressure greater than 300 kPa (3 bar); or

(b) is completely gaseous at 20 °C under standard pressure of 101,3 kPa;

Gas cartridge means any non-refillable receptacle containing, under pressure, a gas or a mixture of gases. It may be fitted with a valve;

H

Handling device (for flexible IBCs) means any sling, loop, eye or frame attached to the body of the IBC or formed from the continuation of the IBC body material;

Hermetically closed tank means a tank whose openings are hermetically closed and which is not equipped with safety valves, bursting discs or other similar safety devices. Tanks having safety valves preceded by a bursting disc shall be deemed to be hermetically closed. Valves to avoid an unacceptable negative pressure within the shell, without intervening bursting discs, shall however be permitted in shells not required to be hermetically closed during carriage under the special requirements of Chapter 4.3;

I

IBC, see 'Intermediate bulk container';

ICAO Technical Instructions means the Technical Instructions for the Safe Transport of Dangerous Goods by Air, which complement Annex 18 to the Chicago Convention on International Civil Aviation (Chicago 1944), published by the International Civil Aviation Organization (ICAO) in Montreal;

IMDG Code means the International Maritime Dangerous Goods Code for the Carriage of Dangerous Goods, for the implementation of chapter VII, part A, of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), published by the International Maritime Organization (IMO), London;

Inner packaging means a packaging for which an outer packaging is required for carriage;

Inner receptacle means a receptacle which requires an outer packaging in order to perform its containment function;

Intermediate bulk container (IBC) means a rigid, or flexible portable packaging, other than those specified in Chapter 6.1, that:

(a) has a capacity of:

   (i) not more than 3 m^3; for solids and liquids of Packing Groups II and III;

   (ii) not more than 1,5 m^3; for solids of Packing Group I when packed in flexible, rigid plastics, composite, fibreboard and wooden IBCs;

   (iii) not more than 3 m^3; for solids of Packing Group I when packed in metal IBCs;

(iv) not more than 3 m^3; for radioactive material of Class 7;

(b) is designed for mechanical handling;

(c) is resistant to the stresses produced in handling and transport as determined by the tests specified in Chapter 6.5 (see also 'Composite IBC with plastics inner receptacle', 'Fibreboard IBC', 'Flexible IBC', 'Metal IBC', 'Rigid plastics IBC' and 'Wooden IBC');

NOTE 1. Tank-containers that meet the requirements of Chapter 6.7 or 6.8 are not considered to be intermediate bulk containers (IBCs).

2. Intermediate bulk containers (IBCs) which meet the requirements of Chapter 6.5 are not considered to be containers for the purposes of this Directive.

Intermediate packaging means a packaging placed between inner packagings or articles, and an outer packaging;

J

Jerrican means a metal or plastics packaging of rectangular or polygonal cross-section with one or more orifices;

L

Large container means:

(a) a container having an internal volume of more than 3 m^3;

(b) in the meaning of the CSC, a container of a size such that the area enclosed by the four outer bottom corners is either

(i) at least 14 m^2 (150 square feet); or

(ii) at least 7 m^2 (75 square feet) if fitted with top corner fittings;

NOTE For radioactive material see 2.2.7.2.

Large packaging means a packaging consisting of an outer packaging which contains articles or inner packagings and which:

(a) is designed for mechanical handling;

(b) exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3m^3;

Leakproofness test means a test for determining the leakproofness of a tank, a packaging or an IBC, and of the equipment or closure devices;

NOTE For portable tanks, see Chapter 6.7.

Light-gauge metal packaging means a packaging of circular, elliptical, rectangular or polygonal cross-section (also conical) and taper-necked and pail-shaped packaging made of metal, having a wall thickness of less than 0,5 mm (e.g. tinplate), flat or convex bottomed and with one or more orific es, which is not covered by the definitions for drums or jerricans;

Liner means a tube or bag inserted into a packaging, including large packagings or IBCs, but not forming an integral part of it, including the closures of its openings;

Liquid means a substance which at 50 °C has a vapour pressure of not more than 300 kPa (3 bar), which is not completely gaseous at 20 °C and 101,3 kPa, and which:

(a) has a melting point or initial melting point of 20 °C or less at a pressure of 101,3 kPa, or

(b) is liquid according to the ASTM D 4359-90 test method, or

(c) is not pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

NOTE 'Carriage in the liquid state', for the purpose of tank requirements, means:

— carriage of liquids according to the above definition, or

— solids handed over for carriage in the molten state.

Loader means any enterprise which loads dangerous goods into a wagon or large container;

M

Manual of Tests and Criteria means the third revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, published by the United Nations Organization (ST/SG/AC.10/11/Rev.3);

Mass of package means gross mass of the package unless otherwise stated;

Maximum capacity means the maximum inner volume of receptacles or packagings including intermediate bulk containers (IBCs) and large packagings expressed in cubic metres or litres;

Maximum net mass means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof expressed in kilograms;

Maximum permissible gross mass:

(a) (for all categories of IBCs other than flexible IBCs) means the mass of the body, its service equipment and structural equipment and the maximum permissible load;

(b) (for tanks) means the tare of the tank and the heaviest load authorized for transport;

NOTE For portable tanks, see Chapter 6.7.

Maximum permissible load (for flexible IBCs) means the maximum net mass for which the IBC is intended and which it is authorized to carry;

Maximum working pressure (gauge pressure) means the highest of the following three pressures:

(a) the highest effective pressure allowed in the tank during filling (maximum filling pressure allowed);

(b) the highest effective pressure allowed in the tank during discharge (maximum discharge pressure allowed); and

(c) the effective gauge pressure to which the tank is subjected by its contents (including such extraneous gases as it may contain) at the maximum working temperature.

Unless the special requirements prescribed in Chapter 4.3 provide otherwise, the numerical value of this working pressure (gauge pressure) shall not be lower than the vapour pressure (absolute pressure) of the filling substance at 50 °C.

For tanks equipped with safety valves (with or without bursting disc), the maximum working pressure (gauge pressure) shall however be equal to the prescribed opening pressure of such safety valves (see also 'Calculation pressure', 'Discharge pressure', 'Filling pressure', and 'Test pressure').

NOTE For portable tanks, see Chapter 6.7.

MEGC, see 'Multiple-element gas container';

Metal IBC means a metal body together with appropriate service and structural equipment;

Mild steel means a steel having a minimum breaking strength between 360 N/mm^2 and 440 N/mm^2;

NOTE For portable tanks, see Chapter 6.7.

Multiple-element gas container (MEGC) means a unit containing elements which are linked to each other by a manifold and mounted on a frame. The following elements are considered to be elements of a multiple-element gas-container: cylinders, tubes, pressure drums and bundles of cylinders as well as tanks for the carriage of gases of Class 2 having a capacity of more than 450 litres;

N

Nominal capacity of the receptacle means the nominal volume of the dangerous substance contained in the receptacle expressed in litres. For compressed gas cylinders the nominal capacity shall be the water capacity of the cylinder;

N.O.S. entry (not otherwise specified entry) means a collective entry to which substances, mixtures, solutions or articles may be assigned if they:

(a) are not mentioned by name in Table A of Chapter 3.2, and

(b) exhibit chemical, physical and/or dangerous properties corresponding to the Class, classification code, packing group and the name of the n.o.s. entry;

O

Open container means an open top container or a platform based container;

Open wagon means a wagon with or without side boards and a tailboard, the loading surfaces of which are open;

Operator of a tank-container, portable tank or tank wagon means the enterprise in whose name the tank-container, portable tank or tank wagon is registered or approved for transport;

Outer packaging means the outer protection of the composite or combination packaging together with any absorbent materials, cushioning and any other components necessary tocontain and protect inner receptacles or inner packagings;

Overpack means an enclosure used by a single consignor to contain one or more packages, consolidated into a single unit easier to handle and stow during carriage.

Examples of overpacks:

(a) a loading tray such as a pallet, on which several packages are placed or stacked and secured by a plastic strip, shrink or stretch wrapping or other appropriate means; or

(b) an outer protective packaging such as a box or a crate;

P

Package means the complete product of the packing operation, consisting of the packaging or large packaging or IBC and its contents prepared for dispatch. The term includes receptacles for gases as defined in this section as well as articles which, because of their size, mass or configuration may be carried unpackaged or carried in cradles, crates or handling devices. The term does not apply to substances which are carried in bulk, nor to substances carried in tanks;

NOTE For radioactive material, see 2.2.7.2.

Packaging means the receptacle and any other components or materials necessary for the receptacle to perform its containment function (see also ‘Combination packaging’, ‘Composite packaging (plastics material)’, ‘Composite packaging (glass, porcelain or stoneware)’, ‘Inner packaging’, ‘Intermediate bulk container (IBC)’, ‘Intermediate packaging’, ‘Large packaging’, ‘Light-gauge metal packaging’, ‘Outer packaging’, ‘Reconditioned packaging’, ‘Remanufactured packaging’, ‘Reused packaging’, ‘Salvage packaging’ and ‘Siftproof packaging’);

NOTE For radioactive material, see 2.2.7.2.

Packer means any enterprise which puts dangerous goods into packagings, including large packagings and intermediate bulk containers (IBCs) and, where necessary, prepares packages for carriage;

Packing group is a group to which, for packing purposes, certain substances may be assigned in accordance with their degree of danger during transport. The packing groups have the following meanings which are explained more fully in Part 2:

Packing group I: Substances presenting high danger;

Packing group II: Substances presenting medium danger; and

Packing group III: Substances presenting low danger;

NOTE Certain articles that contain dangerous goods are also assigned to a packing group.

Piggyback transport means the carriage of road vehicles on rail wagons;

Portable tank means a multimodal tank having a capacity of more than 450 litres in accordance with the definition in Chapter 6.7 or the IMDG Code and indicated by a tank transport instruction (T-Code) in column 10 of Table A of Chapter 3.2;

Pressure drum means a welded, transportable pressure receptacle of a capacity exceeding 150 litres and of not more than 1 000 litres (e.g. cylindrical receptacles equipped with rolling hoops, receptacles on skids and receptacles in frames);

Pressurized gas cartridge, see 'Aerosol dispenser';

Protected IBC (for metal IBCs) means an IBC provided with additional protection against impact, the protection taking the form of, for example, a multi-layer (sandwich) or doublewall construction, or a frame with a metal lattice-work casing;

Q

Quality assurance means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing confidence that the safety requirements of this Directive are met in practice;

R

Railway infrastructure means all tracks and fixed equipment necessary for the movement of rail traffic and transport safety;

Receptacle means a containment vessel for receiving and holding substances or articles, including any means of closing. This definition does not apply to shells;

NOTE Types of receptacle for gases of Class 2 are cryogenic receptacles, cylinders, tubes, pressure drums and bundles of cylinders;

Receptacle (Class 1) means boxes, bottles, cans, drums, jars or tubes, including any means of closure used in the inner or intermediate packaging;

Reconditioned packaging means in particular

(a) metal drums that are:

  (i) cleaned to original materials of construction, with all former contents, internal and external corrosion, and external coatings and labels removed;

  (ii) restored to original shape and contour, with chimes (if any) straightened and sealed and all non-integral gaskets replaced; and

  (iii) inspected after cleaning but before painting, with rejection of packagings with visible pitting, significant reduction in the material thickness, metal fatigue, damaged threads or closures or other significant defects;

(b) plastics drums and jerricans that:

  (i) are cleaned to original materials of construction, with all former contents, external coatings and labels removed;

  (ii) have all non-integral gaskets replaced; and

  (iii) are inspected after cleaning with rejection of packagings with visible damage such as tears, creases or cracks, or damaged threads or closures or other significant defects.

Recycled plastics material means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings;

Reel (Class 1) means a device made of plastics, wood, fibreboard, metal or other suitable material comprising a central spindle with, or without, side walls at each end of the spindle. Articles and substances can be wound onto the spindle and may be retained by side walls;

Reference steel means a steel with a tensile strength of 370 N/mm^2 and an elongation at fracture of 27 %;

Remanufactured packaging means in particular

(a) metal drums that:

(i) are produced as a UN type complying with the requirements of Chapter 6.1 from a non-UN type;

(ii) are converted from one UN type complying with the requirements of Chapter 6.1 to another UN type complying with the same requirements; or

(iii) undergo the replacement of integral structural components (such as non-removable heads);

(b) plastics drums that:

(i) are converted from one UN type to another UN type (e.g. 1H1 to 1H2); or

(ii) undergo the replacement of integral structural components.

Remanufactured drums are subject to the requirements of Chapter 6.1 which apply to new drums of the same type;

Reused packaging means a packaging which has been examined and found free of defects affecting the ability to withstand the performance tests. The term includes those packagings which are refilled with the same or similar compatible contents and are carried within distribution chains controlled by the consignor of the product;

Rigid inner receptacle (for composite IBCs) means a receptacle which retains its general shape when empty without its closures in place and without benefit of the outer casing. Any inner receptacle that is not 'rigid' is considered to be 'flexible';

Rigid plastics IBC means a rigid plastics body, which may have structural equipment together with appropriate service equipment;

S

Safety valve means a self-closing, spring-loaded device the purpose of which is to protect the tank against unacceptable excess internal pressure;

SADT see 'Self-accelerating decomposition temperature';

Salvage packaging means a special packaging conforming to the applicable requirements of Chapter 6.1 into which damaged, defective or leaking dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;

Self-accelerating decomposition temperature (SADT), means the lowest temperature at which self-accelerating decomposition may occur with the substance in the packaging as used during carriage. Requirements for determining the SADT and the effects of heating under confinement are contained in Part II of the Manual of Tests and Criteria;

Service equipment

(a) of the tank means filling and emptying, venting, safety, heating and heat insulating devices and measuring instruments;

(b) of the elements of a battery-wagon or of a MEGC means filling and emptying devices, including the manifold, safety devices and measuring instruments;

(c) of an IBC means the filling and discharge devices and any pressure-relief or venting, safety, heating and heat insulating devices and measuring instruments;

Sheeted container means an open container equipped with a sheet to protect the goods loaded;

Sheeted wagon means an open wagon provided with a sheet to protect the load;

Shell means the sheathing containing the substance (including the openings and their closures);

NOTE 1. This definition does not apply to receptacles.

2. For portable tanks, see Chapter 6.7.

Sift-proof packaging means a packaging impermeable to dry contents, including fine solid material produced during carriage;

Small container means a container having an internal volume of not less than 1 m^3; and not more than 3 m^3;

NOTE For radioactive material, see 2.2.7.2.

Small receptacle containing gas: see 'Gas cartridge';

Solid means:

(a) a substance with a melting point or initial melting point of more than 20 °C at a pressure of 101,3 kPa, or

(b) a substance which is not liquid according to the ASTM D 4359-90 test method or which is pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

Structural equipment

(a) for tanks of a tank wagon, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;

(b) for tanks of a tank-container, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;

NOTE For portable tanks, see Chapter 6.7.

(c) for elements of a battery-wagon or an MEGC means the external reinforcing, fastening, protective or stabilizing members of the shell or receptacle;

(d) for IBCs other than flexible IBCs means the reinforcing, fastening, handling, protective or stabilizing members of the body (including the base pallet for composite IBCs with plastics inner receptacle);

Swap-body, see 'Container';

T

Tank means a shell, including its service and structural equipment.

NOTE For portable tanks, see 6.7.4.1.

Tank-container means an article of transport equipment meeting the definition of a container, and comprising a shell and items of equipment, including the equipment to facilitate movement of the tank-container without significant change of attitude, used for the carriage of gases, liquid, powdery or granular substances and having a capacity of more than 0,45 m^3 (450 litres);

NOTE IBCs which meet the requirements of Chapter 6.5 are not considered to be tank-containers.

Tank swap body is considered to be a tank-container;

Tank wagon means a wagon intended for the carriage of liquids, gases, powdery or granular substances, comprising a superstructure, consisting of one or more shells and an underframe fitted with its own items of equipment (running gear, suspension, buffing, traction, braking gear and inscriptions);

NOTE Tank wagon also includes wagons with demountable tanks.

Technical/biological/chemical name means a name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose;

Test pressure means the highest effective pressure which arises in the tank during the pressure test (see also 'Calculation pressure', 'Discharge pressure', 'Filling pressure', and 'Maximum working pressure (gauge pressure)');

NOTE For portable tanks, see Chapter 6.7.

Tray (Class 1) is a sheet of metal, plastics, fibreboard or other suitable material which is placed in the inner, intermediate or outer packaging and achieves a close-fit in such packaging. The surface of the tray may be shaped so that packagings or articles can be inserted, held secure and separated from each other;

Tube (Class 2) means a seamless transportable pressure receptacle of a capacity exceeding 150 litres and of not more than 5 000 litres;

U

UN Model Regulations means the Model Regulations annexed to the eleventh revised edition of the Recommendations on the Transport of Dangerous Goods published by the United Nations (ST/SG/AC.10/1/Rev.11);

UN number means the four-figure identification number of the substance or article taken from the UN Model Regulations;

V

Vacuum valve means a self-closing, spring-loaded pressure sensitive device the purpose of which is to protect the tank against unacceptable negative internal pressure;

W

Wagon means a rail vehicle without its own means of propulsion that runs on its own wheels on railway tracks and is used for the carriage of goods;

Wagon load means the exclusive use of a wagon, whether or not the loading space of the wagon is used wholly or in part;

NOTE The corresponding term for Class 7 is 'exclusive use' (see 2.2.7.2).

Wastes means substances, solutions, mixtures or articles for which no direct use is envisaged but which are transported for reprocessing, dumping, elimination by incineration or other methods of disposal;

Wooden barrel means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops;

Wooden IBC means a rigid or collapsible wooden body, together with an inner liner (but no inner packaging) and appropriate service and structural equipment;

Woven plastics (for flexible IBCs) means a material made from stretch tapes or monofilaments of suitable plastics material.

1.2.2. *Units of measurement*

1.2.2.1. The following units of measurementa are applicable in this Directive: ([1])

Measurement of	SI Unit ([2])	Acceptable alternative unit	Relationship between units
Length	m (metre)	—	—
Area	m^2 (square metre)	—	—
Volume	m^3 (cubic metre)	l ([3]) (litre)	1 l = $10^{-3} m^3$
Time	s (second)	min. (minute)	1 min. = 60 s
		h (hour)	1 h = 3 600 s
		d (day)	1 d = 86 400 s
Mass	kg (kilogram)	g (gramme)	1 g = 10^{-3} kg
		t (tonne)	1 t = 10^3 kg
Mass density	kg/m^3	kg/l	1 kg/l = 10^3 kg/m^3
Temperature	K (kelvin)	°C (degree Celsius)	0 °C = 273,15 K
Temperature difference	K (kelvin)	°C (degree Celsius)	1 °C = 1 K
Force	N (newton)	—	1 N = 1 kg · m/s^2
Pressure	Pa (pascal)	—	1 Pa = 1 N/m^2
		bar (bar)	1 bar = 10^5 Pa

Measurement of	SI Unit (2)	Acceptable alternative unit	Relationship between units
Stress	N/m^2	N/mm^2	1 N/mm^2 = 1 MPa
Work	kWh	(kilowatt hours)	1 kWh = 3,6 MJ
Energy	J (joule)		1 J = 1 N.m = 1 W.s
Quantity of heat		eV (electronvolt)	1 eV = $0,1602 \times 10^{-18}$J
Power	W (watt)	—	1 W = 1 J/s = 1 N.m/s
Kinematic viscosity	m^2/s	mm^2/s	1 mm^2/s = 10^{-6} m^2/s
Dynamic viscosity	Pa.s	mPa.s	1 mPa.s = 10^{-3} Pa.s
Activity	Bq (becquerel)		
Dose equivalent	Sv (sievert)		

(1) The following round figures are applicable for the conversion of the units hitherto used into SI Units.

Force				
1 kg	= 9,807 N			
1 N	= 0,102 kg			
Stress				
1 kg/mm^2	= 9,807 N/mm^2			
1 N/mm^2	= 0,102 kg/mm^2			
Pressure				
1 Pa	= 1 N/m^2	= 10^{-5} bar	= $1,02 \times 10^{-5}$ kg/cm^2	= $0,75 \times 10^{-2}$ torr
1 bar	= 10^5 Pa	= 1,02 kg/cm^2	= 750 torr	
1 kg/cm^2	= $9,807 \times 10^4$ Pa	= 0,9807 bar	= 736 torr	
1 torr	= $1,33 \times 10^2$ Pa	= $1,33 \times 10^{-3}$ bar	= $1,33 \times 10^{-3}$ kg/cm^2	
Energy, Work, Quantity of heat				
1 J	= 1 N.m	= $0,278 \times 10^{-6}$ kWh	= 0,102 kg.m	= $0,239 \times 10^{-3}$ kcal
1 kWh	= $3,6 \times 10^6$ J	= 367×10^3 kg.m	= 860 kcal	
1 kg.m	= 9,807 J	= $2,72 \times 10^{-6}$ kWh	= $2,34 \times 10^{-3}$ kcal	
1 kcal	= $4,19 \times 10^3$ J	= $1,16 \times 10^{-3}$ kWh	= 427 kg.m	
Power				
1 W	= 0,102 kg.m/s	= 0,86 kcal/h		
1 kg.m/s	= 9,807 W	= 8,43 kcal/h		
1 kcal/h	= 1,16 W	= 0,119 kg.m/s		
Kinematic viscosity				
1 m^2/s	= 10^4 St (Stokes)			
1 St	= 10^{-4} m^2/s			
Dynamic viscosity				
1 Pa.s	= 1 $N.s/m^2$	= 10 P (poise)	= 0,102 $kg.s/m^2$	
1 P	= 0,1 Pa.s	= 0,1 $N.s/m^2$	= $1,02 \times 10^{-2}$ $kg.s/m^2$	
1 $kg.s/m^2$	= 9,807 Pa.s	= 9,807 $N.s/m^2$	= 98,07 P	

(2) The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92 310 Sèvres).

(3) The abbreviation 'L' for litre may also be used in place of the abbreviation 'l' when a typewriter cannot distinguish between figure '1' and letter 'l'.
The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

Factor			Prefix	Symbol
1 000 000 000 000 000 000	= 10^{18}	quintillion	exa	E
1 000 000 000 000 000	= 10^{15}	quadrillion	peta	P
1 000 000 000 000	= 10^{12}	trillion	tera	T
1 000 000 000	= 10^9	billion	giga	G
1 000 000	= 10^6	million	mega	M
1 000	= 10^3	thousand	kilo	k
100	= 10^2	hundred	hecto	h
10	= 10^1	ten	deca	da
0,1	= 10^{-1}	tenth	deci	d
0,01	= 10^{-2}	hundredth	centi	c
0,001	= 10^{-3}	thousandth	milli	m
0,000 001	= 10^{-6}	millionth	micro	µ
0,000 000 001	= 10^{-9}	billionth	nano	n
0,000 000 000 001	= 10^{-12}	trillionth	pico	p
0,000 000 000 000 001	= 10^{-15}	quadrillionth	femto	f
0,000 000 000 000 000 001	= 10^{-18}	quintillionth	atto	a

NOTE 10^9 = 1 billion is United Nations usage in English. By analogy, so is 10^{-9} = 1 billionth.

1.2.2.2. Unless expressly stated otherwise, the sign '%' in this Directive represents:

(a) In the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid, a percentage mass based on the total mass of the mixture, the solution or the wetted solid;

(b) In the case of mixtures of compressed gases, when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;

(c) In the case of mixtures of liquefied gases and gases dissolved under pressure, the proportion of the mass indicated as a percentage of the total mass of the mixture.

1.2.2.3. Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.

1.2.2.4. Where this Directive specifies a degree of filling for receptacles, this is always related to a reference temperature of the substances of 15 °C, unless some other temperature is indicated.

CHAPTER 1.3

Training of persons involved in the carriage of dangerous goods

1.3.1. *Scope*

Persons employed by the participants referred to in Chapter 1.4, whose duties concern the carriage of dangerous goods, shall receive training in the requirements governing the carriage of such goods appropriate to their responsibilities and duties.

NOTE With regard to training for the safety adviser, see 1.8.3.

1.3.2. *Nature of the training*

The training shall take the following form, appropriate to the responsibility and duties of the individual concerned.

1.3.2.1. Introduction

Personnel shall be familiar with the general requirements of the requirements for the carriage of dangerous goods.

1.3.2.2. Function-specific training

Personnel shall receive detailed training, commensurate directly with their duties and responsibilities in the requirements of the regulations concerning the carriage of dangerous goods.

Where the carriage of dangerous goods involves a multimodal transport operation, the personnel shall be made aware of the requirements concerning other transport modes.

1.3.2.3. Safety training

Commensurate with the degree of risk of injury or exposure arising from an incident involving the carriage of dangerous goods, including loading and unloading, personnel shall receive training covering the hazards and dangers presented by dangerous goods.

The training provided shall aim to make personnel aware of the safe handling and emergency response procedures.

1.3.2.4. Training for Class 7

For the purpose of Class 7, personnel shall receive appropriate training concerning the radiation hazards involved and the precautions to be observed in order to ensure restriction of their exposure and that of other persons who might be affected by their actions.

1.3.3. *Documentation*

Details of all the training undertaken shall be kept by both the employer and the employee and shall be verified upon commencing a new employment. The training shall be periodically supplemented with refresher training to take account of changes in regulations.

CHAPTER 1.4

Safety obligations of the participants

1.4.1. *General safety measures*

1.4.1.1 The participants in the carriage of dangerous goods shall take appropriate measures according to the nature and the extent of foreseeable dangers, so as to avoid damage or injury and, if necessary, to minimize their effects. They shall, in all events, comply with the requirements of this Directive in their respective fields.

1.4.1.2. When there is an immediate risk that public safety may be jeopardized, the participants shall immediately notify the emergency services and shall make available to them the information they require to take action.

1.4.1.3. This Directive may specify certain of the obligations falling to the various participants.

If a Member State considers that no lessening of safety is involved, it may in its domestic legislation transfer the obligations falling to a specific participant to one or several other participants, provided that the obligations of 1.4.2 and 1.4.3 are met.

The requirements of 1.2.1, 1.4.2 and 1.4.3 concerning the definitions of participants and their respective obligations shall not affect the requirements of domestic law concerning the legal consequences (criminal nature, liability, etc.) stemming from the fact that the participant in question is e.g. a legal entity, a self-employed worker, an employer or an employee.

1.4.2. *Obligations of the main participants*

1.4.2.1. Consignor

1.4.2.1.1. The consignor of dangerous goods is required to hand over for carriage only consignments which conform to the requirements of this Directive. In the context of 1.4.1, he shall in particular:

(a) ascertain that the dangerous goods are classified and accepted for carriage in accordance with this Directive;

(b) furnish the carrier with information and data and, if necessary, the required consignment notes and accompanying documents (authorizations, approvals, notifications, certificates, etc.), taking into account in particular the requirements of Chapter 5.4 and of the tables in Part 3;

(c) use only packagings, large packagings, intermediate bulk containers (IBCs) and tanks (tank wagons, demountable tanks, battery wagons, MEGCs, portable tanks and tankcontainers) approved for and suited to the carriage of the substances concerned and bearing the markings prescribed by this Directive;

(d) comply with the requirements on the means of dispatch and on restrictions on forwarding;

(e) ensure that even empty uncleaned and not degassed tanks (tank wagons, demountable tanks, battery wagons, MEGCs, portable tanks and tank-containers) or empty, uncleaned wagons and large and small containers, for carriage in bulk are appropriately marked and labelled and that empty uncleaned tanks are closed and present the same degree of leakproofness as if they were full.

1.4.2.1.2. If the consignor uses the services of other participants (packer, loader, filler, etc.), he shall take appropriate measures to ensure that the consignment meets the requirements of this Directive. He may, however, in the case of 1.4.2.1.1 (a), (b), (c) and (e), rely on the information and data made available to him by other participants.

1.4.2.1.3. When the consignor acts on behalf of a third party, the latter shall inform the consignor in writing that dangerous goods are involved and make available to him all the information and documents he needs to perform his obligations.

1.4.2.2. Carrier

1.4.2.2.1. In the context of 1.4.1, the carrier who takes over the dangerous goods at the point of departure shall in particular, by means of representative checks:

(a) ascertain that the dangerous goods to be carried are accepted for carriage under this Directive;;

(b) ascertain that the prescribed documentation is attached to the consignment note and is also forwarded;

(c) ascertain visually that the wagons and loads have no obvious defects, leakages or cracks, missing equipment, etc.;

(d) ascertain that the date of the next test for tank wagons, battery wagons, demountable tanks, portable tanks, tank-containers and MEGCs has not expired;

(e) verify that the wagons are not overloaded;

(f) ascertain that the placards and markings prescribed for the wagons have been affixed;

Where appropriate, this shall be done on the basis of the transport documents and accompanying documents, by a visual inspection of the wagon or the containers and, where appropriate, the load.

The requirements of this paragraph are considered to have been complied with if Section 5 of UIC leaflet 471-3 is applied.

1.4.2.2.2. The carrier may, however, in the case of 1.4.2.2.1 (a), (b), (e) and (f), rely on information and data made available to him by other participants.

1.4.2.2.3. If the carrier observes an infringement of the requirements of this Directive, in accordance with 1.4.2.2.1, he shall not forward the consignment until the requirements have been met.

1.4.2.2.4. If, during the journey, an infringement which could jeopardize the safety of the operation is observed, the consignment shall be halted as soon as possible bearing in mind the requirements of traffic safety, of the safe immobilisation of the consignment, and of public safety.

The transport operation may only be continued once the consignment complies with applicable regulations. The competent authority(ies) concerned by the rest of the journey may grant an authorization to pursue the transport operation.

In case the required compliance cannot be achieved and no authorization is granted for the rest of the journey, the competent authority(ies) shall provide the carrier with the necessary administrative assistance. The same shall apply in case the carrier informs this/these competent authority(ies) that the dangerous nature of the goods carried was not communicated to him by the consignor and that he wishes, by virtue of the law applicable in particular to the contract of carriage, to unload, destroy or render the goods harmless.

1.4.2.3. Consignee

1.4.2.3.1. The consignee has the obligation not to defer acceptance of the goods without compelling reasons and to verify, after unloading, that the requirements of this Directive concerning him have been complied with.

In the context of 1.4.1, he shall in particular:

(a) carry out in the cases provided for by this Directive the prescribed cleaning and decontamination of the wagons and containers;

(b) ensure that the wagons and containers once completely unloaded and cleaned, degassed and decontaminated, no longer bear placards and orange plates.

A wagon or container may only be returned or reused once the above requirements have been met.

1.4.2.3.2. If the consignee makes use of the services of other participants (unloader, cleaner, decontamination facility, etc.) he shall take appropriate measures to ensure that the requirements of 1.4.2.3.1 have been complied with.

1.4.3. *Obligations of the other participants*

A non-exhaustive list of the other participants and their respective obligations is given below. The obligations of the other participants flow from 1.4.1 above insofar as they know or should have known that their duties are performed as part of a transport operation subject to this Directive.

1.4.3.1. Loader

1.4.3.1.1. In the context of 1.4.1, the loader has the following obligations in particular:

(a) he shall hand the dangerous goods over to the carrier only if they are authorized for carriage in accordance with this Directive;

(b) he shall, when handing over for carriage packed dangerous goods or uncleaned empty packagings, check whether the packaging is damaged. He shall not hand over a package the packaging of which is damaged, especially if it is not leakproof, and there are leakages or the possibility of leakages of the dangerous substance, until the damage has been repaired; this obligation also applies to empty uncleaned packagings;

(c) he shall, when loading dangerous goods in a wagon or a large container, comply with the special requirements concerning loading and handling;

(d) he shall, when he hands dangerous goods over for carriage directly, comply with the requirements concerning placarding on the wagon or large container or the orange plates on the wagon or large container;

(e) he shall, when loading packages, comply with the prohibitions on mixed loading taking into account dangerous goods already in the wagon or large container and requirements concerning the separation of foodstuffs, other articles of consumption or animal feedstuffs.

1.4.3.1.2. The loader may, however, in the case of 1.4.3.1.1 (a), (d) and (e), rely on information and data made available to him by other participants.

1.4.3.2. Packer

In the context of 1.4.1, the packer shall comply with in particular:

(a) the requirements concerning packing conditions, or mixed packing conditions and,

(b) when he prepares packages for carriage, the requirements concerning marking and labelling of packages.

1.4.3.3. Filler

In the context of 1.4.1, the filler has the following obligations in particular:

(a) he shall ensure prior to the filling of tanks that both they and their equipment are technically in a satisfactory condition;

(b) he shall ensure that the date of the next test for tank wagons, battery wagons, wagons with demountable tanks, portable tanks, tank-containers and MEGCs has not expired;

(c) he shall only fill tanks with the dangerous goods authorized for carriage in those tanks;

(d) he shall, in filling the tank, comply with the requirements concerning dangerous goods in adjoining compartments;

(e) he shall, during the filling of the tank, observe the maximum permissible degree of filling or the maximum permissible mass of contents per litre of capacity for the substance being filled;

(f) he shall, after filling the tank, check the leakproofness of the closing devices;

(g) he shall ensure that no dangerous residue of the filling substance adheres to the outside of the tanks filled by him;

(h) he shall, in preparing the dangerous goods for carriage, affix the prescribed orange plates , danger labels or placards on the tanks, wagons and large and small containers filled by him, in accordance with the requirements;

(i) he shall, before and after filling tank wagons with a liquefied gas, observe the applicable special checking requirements.

1.4.3.4. Tank-container or portable tank operator

In the context of 1.4.1, the tank-container or portable tank operator shall in particular:

(a) ensure compliance with the requirements for construction, equipment, tests and marking;

(b) ensure that the maintenance of tanks and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the tank-container or portable tank satisfies the requirements of this Directive until the next inspection;

(c) have a special check made when the safety of the tank or its equipment is liable to be impaired by a repair, an alteration or an accident.

1.4.3.5. Tank wagon operator

In the context of 1.4.1, the tank wagon operator shall in particular:

(a) ensure compliance with the requirements for construction, equipment, tests and marking;

(b) ensure that the maintenance of tanks and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the tank wagon satisfies the requirements of this Directive until the next inspection;

(c) have a special check made when the safety of the tank or its equipment is liable to be impaired by a repair, an alteration or an accident.

CHAPTER 1.5

Derogations

1.5.1. *Temporary derogations*

1.5.1.1. For the purpose of adapting the requirements of this Directive to technological and industrial developments, the competent authorities of the Member States may agree directly among themselves to authorize certain transport operations in their territories by temporary derogation from the requirements of this Directive, provided that safety is not compromised thereby. The authority which has taken the initiative with respect to the temporary derogation shall notify such derogations to the Commission.

Note. 'Special arrangement' in accordance with 1.7.4 is not considered to be a temporary derogation in accordance with this section.

1.5.1.2. The period of validity of the temporary derogation shall not be more than five years from the date of its entry into force. The temporary derogation shall automatically cease as from the date of the entry into force of a relevant amendment to this Directive.

1.5.1.3. Transport operations on the basis of temporary derogations shall constitute transport operations in the sense of this Directive.

'§ 2 Two or more States, by agreement, or two or more railways, by tariff clauses, may jointly determine the conditions with which certain substances or articles not acceptable for carriage under the RID must comply if they are nevertheless to be accepted. States or railways may, in the same manner, make the conditions for acceptance laid down in the RID less rigorous. Such agreements and tariff clauses must be published and notified to the Central Office which will bring them to the notice of the States.'

1.5.2. *Military consignments*

Derogations apply to military consignments, i.e. consignments with substances or articles of Class 1 belonging to the armed forces or for which the armed forces are responsible (see 5.2.1.5, sub-sections 5.2.2.1.8, 5.3.1.1.2 and 5.4.1.2.1(f) and 7.2.4, special requirement W 2.)

CHAPTER 1.6

Transitional measures

1.6.1. *General*

1.6.1.1. Substances and articles of this Directive may be carried until 31 December 2002 in accordance with the requirements of this Directive ([1]) applicable up to 30 June 2001.

NOTE 1. For the information in the consignment note, see 5.4.1.1.12.

2. Transitional requirements apply to the carriage of material of Class 7 (see 1.6.6.4.)

([1]) RID edition in force from 1 January 1999.

1.6.1.2. The danger labels which until 31 December 1998 conformed to the models prescribed up to that date may be used until stocks are exhausted.

1.6.1.3. Substances and articles of Class 1, belonging to the armed forces of a Member State, that were packaged prior to 1 January 1990 in accordance with the requirements of RID ([1]) in effect at that time may be carried after 31 December 1989 provided the packagings maintain their integrity and are declared in the consignment note as military goods packaged prior to 1 January 1990. The other requirements applicable as from 1 January 1990 for this Class shall be complied with.

1.6.1.4. Substances and articles of Class 1 that were packaged between 1 January 1990 and 31 December 1996 in accordance with the requirements of RID ([2]) in effect during that period may be carried after 31 December 1996, provided the packagings maintain their integrity and are declared in the consignment note as goods of Class 1 packaged between 1 January 1990 and 31 December 1996.

1.6.1.5. IBCs built in accordance with the requirements of marg. 405(5) and 555(3) in force before 1 January 1999, but which do not meet the requirements of marg. 405(5) and 555(3) in force after 1 January 1999, may still be used.

1.6.2. *Receptacles for gases of Class 2*

1.6.2.1. Receptacles built before 1 January 1997 and which do not conform to the requirements of RID applicable as from 1 January 1997, but the transport of which was permitted under the requirements of RID applicable up to 31 December 1996, may continue to be used after that date if the periodic test requirements in Packing Instructions P200 and P203 are complied with.

1.6.2.2. Cylinders in accordance with the definition in 1.2.1 which were submitted to an initial inspection or periodic inspection before 1 January 1997 may be carried empty and uncleaned without a label until the date of the next refilling or the next periodic inspection.

1.6.3. *Tank wagons and battery wagons*

1.6.3.1. Tank wagons built before the entry into force of the requirements applicable as from 1 October 1978 may be kept in service if the equipment of the tank meets the requirements of Chapter 6.8. The thickness of the shell wall, except in the case of shells intended for the carriage of liquefied, refrigerated gases of Class 2, shall be appropriate to a calculation pressure of not less than 0,4 MPa (4 bar) (gauge pressure) in the case of mild steel or of not less than 200 kPa (2 bar) (gauge pressure) in the case of aluminium and aluminium alloys.

1.6.3.2. Periodic tests for tank wagons retained in service in conformity with the transitional requirements shall be carried out in accordance with the requirements of 6.8.2.4 and 6.8.3.4 and the special requirements pertaining to the various classes. Unless the earlier requirements prescribed a higher test pressure, a test pressure of 200 kPa (2 bar) (gauge pressure) is sufficient for aluminium and aluminium alloy shells.

1.6.3.3. Tank wagons which meet the transitional requirements of 1.6.3.1 and 1.6.3.2 may be used until 30 September 1998 for the carriage of dangerous goods for which they were approved. This transitional period does not apply to tank wagons intended for the carriage of substances of Class 2 or to tank wagons whose wall thickness and items of equipment meet the requirements of Chapter 6.8.

1.6.3.4. Tank wagons constructed before 1 January 1988 in accordance with the requirements applicable up to 31 December 1987 and which do not conform to the requirements applicable from 1 January 1988 may still be used. This also applies to tank wagons which do not bear the inscription of the shell materials in accordance with Appendix XI, 1.6.1, required from 1 January 1988.

1.6.3.5. Tank wagons constructed before the entry into force of the requirements applicable from 1 January 1993 and which do not conform to those requirements, but were constructed according to the requirements of RID in force until that date may still be used.

1.6.3.6. Tank wagons constructed before the entry into force of the requirements applicable from 1 January 1995 and which do not conform to those requirements, but were constructed according to the requirements of RID in force until that date may still be used.

([1]) RID edition in force from 1 May 1985.
([2]) RID editions in force from 1 January 1990, 1 January 1993 and 1 January 1995.

1.6.3.7. Tank wagons intended for the carriage of flammable liquids with a flash-point from 55 °C to 61 °C constructed before 1 January 1997 in accordance with the requirements of Appendix XI, paragraphs 1.2.7, 1.3.8 and 3.3.3 applicable up to 31 December 1996 which do not conform to the requirements of those paragraphs in force from 1 January 1997 may continue to be used.

1.6.3.8. Tank wagons, battery wagons and wagons with demountable tanks intended for the carriage of substances of Class 2, built before 1 January 1997, may bear the marking in accordance with the requirements in force up to 31 December 1996, until the next periodic test.

However, proper shipping names required by 6.8.3.5.2 or 6.8.3.5.3 need not take into account subsequent adaptions of the proper shipping names of these gases, provided the current proper shipping name appears on the shell or on a plate after the first periodic inspection following that date.

1.6.3.9. Tank wagons intended for the carriage of substances with the following UN numbers built before 1 January 1995 in accordance with the requirements in force up to 31 December 1994, which do not comply with the requirements in force from 1 January 1995, may continue to be used until 31 December 2002:

1092, 1098, 1106, 1135, 1143, 1181, 1182, 1198, 1199, 1228, 1238, 1239, 1251, 1289, 1297, 1545, 1569, 1591, 1593, 1595, 1601, 1602, 1603, 1604, 1605, 1647, 1669, 1693, 1695, 1701, 1702, 1710, 1730, 1731, 1737, 1738, 1742, 1743, 1750, 1751, 1752, 1754, 1758, 1792, 1796, 1808, 1809, 1810, 1817, 1818, 1826, 1827, 1828, 1834, 1836, 1837, 1838, 1846, 1886, 1887, 1888, 1889, 1891, 1897, 1916, 1986, 1988, 1992, 2016, 2017, 2022, 2023, 2051, 2076, 2248, 2258, 2260, 2264, 2267, 2276, 2279, 2285, 2295, 2310, 2321, 2322, 2337, 2357, 2361, 2407, 2438, 2443, 2444, 2477, 2478, 2482, 2484, 2485, 2487, 2488, 2504, 2515, 2516, 2518, 2521, 2526, 2529, 2530, 2558, 2589, 2604, 2606, 2610, 2611, 2619, 2644, 2646, 2653, 2664, 2667, 2684, 2685, 2686, 2688, 2692, 2729, 2733, 2734, 2745, 2746, 2748, 2810, 2811, 2831, 2841, 2872, 2879, 2924, 2927, 2928, 2929, 3023, 3071, 3080, 3142, 3143, 3145, 3246, 3248, 3265, 3277 and 3279.

1.6.3.10. Tank wagons constructed before 1 January 1995 intended for the carriage of substances of UN No 3256 and which do not conform to the requirements in force from 1 January 1995 may continue to be used until 31 December 2004.

1.6.3.11. Tank wagons constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996, and which do not conform to the requirements of Appendix XI, 3.3.3 and 3.3.4 in force from 1 January 1997, may still be used.

1.6.3.12. Tank wagons intended for the carriage of UN 2401 piperidine constructed before 1 January 1999 in accordance with the requirements of Appendix XI, 3.2.3 in force up to 31 December 1998 and which do not conform to the requirements in force from 1 January 1999 may continue to be used until 31 December 2009.

1.6.3.13. Tank wagons constructed before 1 January 1997 intended for the carriage of substances of UN No 3257 and which do not conform to the requirements in force from 1 January 1997 may continue to be used until 31 December 2006.

1.6.3.14. Tank wagons constructed before 1 January 1999 in accordance with the requirements of Appendix XI, 5.3.6.3 and which do not conform to the requirements of Appendix XI, 5.3.6.3 in force from 1 January 1999, may still be used.

1.6.3.15. Tank wagons intended for the carriage of substances with the following UN numbers constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996 and which do not conform to the requirements in force from 1 January 1997, may continue to be used until 31 December 2004:

1092, 1098, 1135, 1143, 1182, 1199, 1238, 1251, 1605, 1647, 1695, 1809, 2295, 2337, 2407, 2438, 2477, 2487, 2488, 2558, 2606, 2644, 2686, 2646, 3023, 3289 and 3290.

1.6.3.16. (Reserved)

1.6.3.17. Tank wagons which do not meet the requirements of the last sentence of Appendix XI, 1.2.8.5 in force from 1 July 2000, may continue to be used until the next inspection, until 30 June 2004.

1.6.3.18. Tank wagons and battery wagons constructed before 1 July 2001 in accordance with the requirements in force up to 30 June 2001 and which do not comply with the requirements in force from 1 July 2001, may still be used. Assignment to the tank codes in the tank type approval and the appropriate markings shall be applied before 1 July 2009.

1.6.4. *Tank-containers en MEGC's*

1.6.4.1. Tank-containers constructed before 1 January 1988 in accordance with the requirements applicable up to 31 December 1987 and which do not conform to the requirements applicable from 1 January 1988 may still be used.

1.6.4.2. Tank-containers constructed before the entry into force of the requirements applicable from 1 January 1993 and which do not conform to those requirements, but were constructed according to the requirements in force until that date may still be used.

1.6.4.3. Tank-containers constructed before the entry into force of the requirements applicable from 1 January 1995 and which do not conform to those requirements, but were constructed according to the requirements in force until that date may still be used.

1.6.4.4. Tank-containers intended for the carriage of flammable liquids with a flash-point from 55 °C to 61 °C constructed before 1 January 1997 in accordance with the requirements of Appendix X, paragraphs 1.2.7, 1.3.8 and 3.3.3 applicable up to 31 December 1996 which do not conform to the requirements of those paragraphs in force from 1 January 1997 may continue to be used.

1.6.4.5. Tank-containers intended for the carriage of substances of Class 2, built before 1 January 1997, may bear the marking in accordance with the requirements in force up to 31 December 1996, until the next periodic test.

However, proper shipping names required by 6.8.3.5.2 or 6.8.3.5.3 need not take into account subsequent adaptions of the proper shipping names of these gases, provided the current proper shipping name appears on the shell or on a plate after the first periodic inspection following that date.

1.6.4.6. Tank-containers constructed before 1 January 1995 intended for the carriage of substances of UN No 3256 and which do not conform to the requirements in force from 1 January 1995 may continue to be used until 31 December 2002.

1.6.4.7. Tank-containers constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996, and which do not conform to the requirements of Appendix X, 3.3.3 and 3.3.4 in force from 1 January 1997, may still be used.

1.6.4.8. Tank-containers constructed before 1 January 1999 in accordance with the requirements of Appendix X, 5.3.6.3 and which do not conform to the requirements of Appendix X, 5.3.6.3 in force from 1 January 1999, may still be used.

1.6.4.9. Tank-containers intended for the carriage of UN 2401 piperidine constructed before 1 January 1999 in accordance with the requirements of Appendix X, 3.2.3 in force up to 31 December 1998 and which do not conform to the requirements in force from 1 January 1999 may continue to be used until 31 December 2009.

1.6.4.10. Tank-containers constructed before 1 January 1997 intended for the carriage of substances of UN No 3257 and which do not conform to the requirements in force from 1 January 1997 may continue to be used until 31 December 2004.

1.6.4.11. Tank-containers intended for the carriage of substances with the following UN numbers constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996 and which do not conform to the requirements in force from 1 January 1997, may continue to be used until 31 December 2001:

1092, 1098, 1135, 1143, 1182, 1199, 1238, 1251, 1605, 1647, 1695, 1809, 2295, 2337, 2407, 2438, 2477, 2487, 2488, 2558, 2606, 2644, 2686, 2646, 3023, 3289 and 3290.

1.6.4.12. Tank-containers and MEGCs constructed before 1 July 2001 in accordance with the requirements applicable up to 30 June 2001, but which do not, however, conform to the requirements applicable as from 1 July 2001, may still be used. Assignment to the tank codes in the design type approvals and the relevant markings shall be carried out prior to 1 July 2006.

1.6.5. (Reserved)

1.6.6. *Class 7*

1.6.6.1. Packages not requiring competent authority approval of design under the 1985 and 1985 (as amended 1990) editions of IAEA Safety Series No 6

Excepted packages, Industrial packages Type IP-1, Type IP-2 and Type IP-3 and Type A packages that did not require approval of design by the competent authority and which meet the requirements of the 1985 or 1985 (as amended 1990) Editions of IAEA Regulations for the Safe Transport of Radioactive Material (IAEA Safety Series No 6) may continue to be used subject to the mandatory programme of quality assurance in accordance with the requirements of 1.7.3 and the activity limits and material restrictions of 2.2.7.7.

Any packaging modified, unless to improve safety, or manufactured after 31 December 2003, shall meet the requirements of this Directive. Packages prepared for transport not later than 31 December 2003 under the 1985 or 1985 (as amended 1990) Editions of IAEA Safety Series No 6 may continue in transport. Packages prepared for transport after this date shall meet the requirements of this Directive.

1.6.6.2. Packages approved under the 1973, 1973 (as amended), 1985 and 1985 (as amended 1990) editions of IAEA Safety Series No 6

1.6.6.2.1. Packagings manufactured to a package design approved by the competent authority under the provisions of the 1973 or 1973 (as amended) Editions of IAEA Safety Series No 6 may continue to be used, subject to: multilateral approval of package design, the mandatory programme of quality assurance in accordance with the applicable requirements of 1.7.3 and the activity limits and material restrictions of 2.2.7.7. No new manufacture of such packaging shall be permitted to commence. Changes in the design of the packaging or in the nature or quantity of the authorized radioactive contents which, as determined by the competent authority, would significantly affect safety shall require that the requirements of this Directive be met. A serial number according to the requirements of 5.2.1.7.5 shall be assigned to and marked on the outside of each packaging.

1.6.6.2.2. Packagings manufactured to a package design approved by the competent authority under the requirements of the 1985 or 1985 (as amended 1990) Editions of IAEA Safety Series No 6 may continue to be used until 31 December 2003, subject to: the mandatory programme of quality assurance in accordance with the requirements of 1.7.3 and the activity limits and material restrictions of 2.2.7.7. After this date use may continue subject, additionally, to multilateral approval of package design. Changes in the design of the packaging or in the nature or quantity of the authorized radioactive contents which, as determined by the competent authority, would significantly affect safety shall require that the requirements of RID be met. All packagings for which manufacture begins after 31 December 2006 shall meet the requirements of this Directive.

1.6.6.3. Special form radioactive material approved under the 1973, 1973 (as amended), 1985 and 1985 (as amended 1990) Editions of IAEA Safety Series No 6

Special form radioactive material manufactured to a design which had received unilateral approval by the competent authority under the 1973, 1973 (as amended), 1985 or 1985 (as amended 1990) Editions of IAEA Safety Series No 6 may continue to be used when in compliance with the mandatory programme of quality assurance in accordance with the applicable requirements of 1.7.3. All special form radioactive material manufactured after 31 December 2003 shall meet the requirements of this Directive.

1.6.6.4. General transitional requirements for the carriage of material of Class 7

The transitional requirements of 1.6.1.1 shall apply to the carriage of material of Class 7 only until 31 December 2001, except use of the requirements of Chapters 1.4 and 1.8, where the transitional requirements may be used until 31 December 2002.

CHAPTER 1.7

General requirements concerning Class 7

1.7.1. *General*

1.7.1.1. This Directive establishes standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to persons, property and the environment that are associated with the carriage of radioactive material. These standards are based on the IAEA Regulations for the Safe Transport of Radioactive Material (ST-1), IAEA, Vienna (1996). Explanatory material on ST-1 can be found in 'Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (1996 Edition)', Safety Standard Series No ST-2, IAEA, Vienna (to be published).

1.7.1.2. The objective of this Directive is to protect persons, property and the environment from the effects of radiation during the transport of radioactive material. This protection is achieved by requiring:

(a) Containment of the radioactive contents;

(b) Control of external radiation levels;

(c) Prevention of criticality; and

(d) Prevention of damage caused by heat.

These requirements are satisfied firstly by applying a graded approach to contents limits for packages and wagons and to performance standards applied to package designs depending upon the hazard of the radioactive contents. Secondly, they are satisfied by imposing requirements on the design and operation of packages and on the maintenance of packagings, including a consideration of the nature of the radioactive contents. Finally, they are satisfied by requiring administrative controls including, where appropriate, approval by competent authorities.

1.7.1.3. This Directive applies to the transport of radioactive material by rail including transport which is incidental to the use of the radioactive material. Transport comprises all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A graded approach is applied to the performance standards in this Directive that is characterized by three general severity levels:

(a) Routine conditions of transport (incident free);

(b) Normal conditions of transport (minor mishaps);

(c) Accident conditions of transport.

1.7.2. *Radiation protection programme*

1.7.2.1. The transport of radioactive material shall be subject to a Radiation Protection Programme which shall consist of systematic arrangements aimed at providing adequate consideration of radiation protection measures.

1.7.2.2. The nature and extent of the measures to be employed in the programme shall be related to the magnitude and likelihood of radiation exposures. The programme shall incorporate the requirements in 1.7.2.3, and 1.7.2.4, CV33 (1.1) and (1.4) of 7.5.11 and applicable emergency response procedures. Programme documents shall be available, on request, for inspection by the relevant competent authority.

1.7.2.3. Protection and safety shall be optimised in order that the magnitude of individual doses, the number of persons exposed, and the likelihood of incurring exposure shall be kept as low as reasonably achievable, economic and social factors being taken into account, and doses to persons shall be below the relevant dose limits. A structured and systematic approach shall be adopted and shall include consideration of the interfaces between transport and other activities.

1.7.2.4. For occupational exposures arising from transport activities, where it is assessed that the effective dose:

(a) is most unlikely to exceed 1 mSv in a year, no special work patterns, detailed monitoring, dose assessment programmes or individual record keeping shall be required;

(b) is likely to be between 1 mSv and 6 mSv in a year, a dose assessment programme via work place monitoring or individual monitoring shall be conducted;

(c) is likely to exceed 6 mSv in a year, individual monitoring shall be conducted.

When individual monitoring or work place monitoring is conducted, appropriate records shall be kept.

1.7.3. *Quality assurance*

Quality assurance programmes based on international, national or other standards acceptable to the competent authority shall be established and implemented for the design, manufacture, testing, documentation, use, maintenance and inspection of all special form radioactive material, low dispersible radioactive material and packages and for transport and in-transit storage operations to ensure compliance with the relevant requirements of this Directive. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared to provide facilities for competent authority inspection during manufacture and use and to demonstrate to any cognizant competent authority that:

(a) the manufacturing methods and materials used are in accordance with the approved design specifications; and

(b) all packagings are periodically inspected and, as necessary, repaired and maintained in good condition so that they continue to comply with all relevant requirements and specifications, even after repeated use.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the quality assurance programme.

1.7.4. *Special arrangement*

1.7.4.1. Special arrangement shall mean those requirements, approved by the competent authority, according to which consignments which do not satisfy all the requirements of this Directive applicable to radioactive material may be carried.

NOTE Special arrangement is not considered to be a temporary derogation in accordance with 1.5.1.

1.7.4.2. Consignments for which conformity with any requirement applicable to Class 7 is impracticable shall not be carried except under special arrangement. Provided the competent authority is satisfied that conformity with the Class 7 requirements of this Directive is impracticable and that the requisite standards of safety established by this Directive have been demonstrated through alternative means the competent authority may approve special arrangement transport operations for single or a planned series of multiple consignments. The overall level of safety in transport shall be at least equivalent to that which would be provided if all the applicable requirements had been met. For international consignments of this type, multilateral approval shall be required.

1.7.5. *Radioactive material possessing other dangerous properties*

In addition to the radioactive and fissile properties, any subsidiary risk of the contents of the package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the packing, labelling, marking, placarding, stowage, separation and carriage, in order to be in compliance with all the relevant requirements of this Directive.

CHAPTER 1.8

Checks and other support measures to ensure compliance with safety requirements

1.8.1. *Administrative controls of dangerous goods*

1.8.1.1. The competent authorities of the Member States may, on their national territory, at any time, conduct spot checks to verify whether the requirements concerning the carriage of dangerous goods have been met.

These checks shall, however, be made without endangering persons, property or the environment and without major disruption of rail services.

1.8.1.2. Participants in the carriage of dangerous goods (Chapter 1.4) shall, without delay, in the context of their respective obligations, provide the competent authorities and their agents with the necessary information for carrying out the checks.

1.8.1.3. The competent authorities may also, for the purposes of carrying out checks on the premises of the enterprises participating in the carriage of dangerous goods (Chapter 1.4), make inspections, consult the necessary documents and remove samples of dangerous goods or packagings for examination, provided that safety is not jeopardized thereby. The participants in the carriage of dangerous goods (Chapter 1.4) shall also make the wagons or parts of wagons and the equipment and installations accessible for the purpose of checking where this is possible and reasonable. They may, if they deem necessary, designate a person from the enterprise to accompany the representative of the competent authority.

1.8.1.4. If the competent authorities observe that the requirements of this Directive have not been met, they may prohibit a consignment or interrupt a transport operation until the defects observed are rectified, or they may prescribe other appropriate measures. Immobilization may take place on the spot or at another place selected by the authorities for safety reasons. These measures shall not cause a major disruption in rail services.

1.8.2. *Mutual administrative support*

1.8.2.1. The Member States shall agree on mutual administrative support for the implementation of this Directive.

1.8.2.2. When a Member State has reasons to observe that the safety of the carriage of dangerous goods on its territory is compromised as a result of very serious or repeated infringements by an enterprise which has its headquarters on the territory of another Member State, it shall notify the competent authorities of this Member State of such infringements. The competent authorities of the Member State on the territory of which the very serious or repeated infringements were observed may request the competent authorities of the Member State on the territory of which the enterprise has its headquarters to take appropriate measures against the offender(s). The transmission of data referring to persons shall not be permitted unless it is necessary for the prosecution of very serious or repeated infringements.

1.8.2.3. The authorities notified shall communicate to the competent authorities of the Member State on the territory of which the infringements were observed, the measures which have, if necessary, been taken with respect to the enterprise.

1.8.3. *Safety adviser*

1.8.3.1. Each undertaking, the activities of which include the transport, or the related loading, unloading, filling or packing of dangerous goods by rail shall appoint one or more safety advisers for the transport of dangerous goods, responsible for helping to prevent the risks inherent in such activities with regard to persons, property and the environment.

1.8.3.2. The competent authorities of the Member States may provide that these requirements shall not apply to undertakings:

(a) the activities of which include the carriage of dangerous goods in means of transport belonging to the armed forces or for which the armed forces are responsible, or

(b) the activities of which concern quantities in each wagon smaller than those referred to in 1.1.3.1, 2.2.7.1.2 and in Chapters 3.3 and 3.4, or

(c) the main or secondary activities of which are not the carriage or the related loading or unloading of dangerous goods but which occasionally engage in the national carriage or the related loading or unloading of dangerous goods posing little danger or risk of pollution.

1.8.3.3. The main task of the adviser shall be, under the responsibility of the head of the undertaking, to seek by all appropriate means and by all appropriate action, within the limits of the relevant activities of that undertaking, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way. With regard to the undertaking's activities, the adviser has the following duties in particular:

— monitoring compliance with the requirements governing the transport of dangerous goods;

— advising his undertaking on the transport of dangerous goods;

— preparing an annual report to the management of his undertaking or a local public authority, as appropriate, on the undertaking's activities in the transport of dangerous goods. Such annual reports shall be preserved for five years and made available to the national authorities at their request.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the undertaking:

— the procedures for compliance with the requirements governing the identification of dangerous goods being carried;

— the undertaking's practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;

— the procedures for checking the equipment used in connection with the transport, loading or unloading of dangerous goods;

— the proper training of the undertaking's employees and the maintenance of records of such training;

— the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the transport, loading or unloading of dangerous goods;

— investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the transport, loading or unloading of dangerous goods;

— the implementation of appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;

— the account taken of the legal requirements and special requirements associated with the transport of dangerous goods in the choice and use of sub-contractors or third parties;

— verification that employees involved in the transport, loading or unloading of dangerous goods have detailed operational procedures and instructions,

— the introduction of measures to increase awareness of the risks inherent in the transport, loading and unloading of dangerous goods;

— the implementation of verification procedures to ensure the presence on board means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;

— the implementation of verification procedures to ensure compliance with the requirements governing loading and unloading.

1.8.3.4. The adviser may also be the head of the undertaking, a person with other duties in the undertaking, or a person not directly employed by that undertaking, provided that that person is capable of performing the duties of adviser.

1.8.3.5. Each undertaking concerned shall, on request, inform the competent authority or the body designated for that purpose by each Member State of the identity of its adviser.

1.8.3.6. Whenever an accident affects persons, property or the environment or results in damage to property or the environment during transport, loading or unloading carried out by the undertaking concerned, the adviser shall, after collecting all the relevant information, prepare an accident report to the management of the undertaking or to a local public authority, as appropriate. That report shall not replace any report by the management of the undertaking which might be required under any other international or national legislation.

1.8.3.7. An adviser shall hold a vocational training certificate, valid for transport by rail. That certificate shall be issued by the competent authority or the body designated for that purpose by each Member State.

1.8.3.8. To obtain a certificate, a candidate shall undergo training and pass an examination approved by the competent authority of the Member State.

1.8.3.9. The main aims of the training shall be to provide candidates with sufficient knowledge of the risks inherent in the transport of dangerous goods, of the legal and administrative requirements and of the duties listed in 1.8.3.3.

1.8.3.10. The examination shall be organized by the competent authority or by an examining body designated by the competent authority.

The examining body shall be designated in writing. This approval may be of limited duration and shall be based on the following criteria:

— competence of the examining body;

— specifications of the form of the examinations the examining body is proposing;

— measures intended to ensure that examinations are impartial;

— independence of the body from all natural or legal persons employing safety advisers.

1.8.3.11. The aim of the examination is to ascertain whether candidates possess the necessary level of knowledge to carry out the duties incumbent upon a safety adviser as listed in 1.8.3.3, for the purpose of obtaining the certificate prescribed in 1.8.3.7, and it shall cover at least the following subjects:

(a) knowledge of the types of consequences which may be caused by an accident involving dangerous goods and knowledge of the main causes of accidents;

(b) requirements under national law, international conventions and agreements, with regard to the following in particular:

— classification of dangerous goods (procedure for classifying solutions and mixtures, structure of the list of substances, classes of dangerous goods and principles for their classification, nature of dangerous goods carried, physical, chemical and toxicological properties of dangerous goods);

— general packing requirements, requirements for tanks and tank-containers (types, code, marking, construction, initial and periodic testing);

— marking, labelling, placarding and orange plates (marking and labelling of packages, placing and removal of placards and orange plates);

— information in the consignment note [necessary information];

— method of consignment and restrictions on forwarding (wagon load, full wagon load, carriage in bulk, carriage in IBCs, carriage in containers; carriage in fixed or demountable tanks);

— carriage of passengers;

— prohibitions and precautions relating to mixed loading;

— segregation of goods;

— limited and exempted quantities;

— handling and stowage (loading and unloading, degree of filling, stowage and segregation);

— cleaning and/or degassing before loading and after unloading;

— crews, vocational training;

— documents to be carried on board (consignment note, copies of any derogations, other documents);

— operational and accidental discharges of pollutants;

— requirements relating to transport equipment.

1.8.3.12. The examination shall consist of a written test which may be supplemented by an oral examination.

The written examination shall consist of two parts:

(a) Candidates shall receive a questionnaire. It shall include at least 20 open questions covering at least the subjects mentioned in the list in 1.8.3.11. However, multiple choice questions may be used. In this case, two multiple choice questions count as one open question. Amongst these subjects particular attention shall be paid to the following subjects:

— general preventive and safety measures;

— classification of dangerous goods;

— general packing provisions, including tanks, tank-containers, tank wagons, etc.;

— danger markings and labels;

— information in the consignment note;

— handling and stowage;

— crew, vocational training;

— documents to be carried on board and consignment notes;

— requirements concerning transport equipment.

(b) Candidates shall undertake a case study in keeping with the duties of the adviser referred to in 1.8.3.3, in order to demonstrate that they have the necessary qualifications to fulfil the task of adviser.

1.8.3.13. The Member States may decide that candidates who intend working for undertakings specializing in the carriage of certain types of dangerous goods need only be questioned on the subjects relating to their activities. These types of goods are:

— Class 1,

— Class 2,

— Class 7,

— Classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 8 and 9.

— UN numbers 1202, 1203, 1223.

The certificate prescribed in 1.8.3.7 shall clearly indicate that it is only valid for those types of dangerous goods referred to in this sub-section on which the adviser has been tested under the conditions defined in 1.8.3.12.

1.8.3.14. The competent authority or the examining body shall keep a running list of the questions that have been included in the examination.

1.8.3.15. The certificate prescribed in 1.8.3.7 shall take the form laid down in 1.8.3.18 and shall be recognized by all Member States.

1.8.3.16. The certificate shall be valid for five years. The period of validity of a certificate shall be extended automatically for five years at a time where, during the final year before its expiry, its holder has followed refresher courses or passed an examination both of which shall be approved by the competent authority.

1.8.3.17. The requirements set out in 1.8.3.1 to 1.8.3.16 shall be considered to have been fulfilled if the relevant conditions of Council Directive 96/35/EC of 3 June 1996 on the appointment and vocational qualification of safety advisers for the transport of dangerous goods by road, rail and inland waterway ([1]) and of European Parliament and Council Directive 2000/18/EC of 17 April 2000 on the minimum requirements applicable to the examination for safety advisers for the transport of dangerous goods by road, rail or inland waterway ([2]) are applied.

1.8.3.18. Certificate of training as safety adviser for the transport of dangerous goods

Certificate No: . . . .

Distinguishing sign of the State issuing the certificate: . . . .

Surname: . . . .

Forename(s): . . . .

Date and place of birth: . . . .

Nationality: . . . .

Signature of holder: . . . .

Valid until … (date) for undertakings which transport dangerous goods and for undertakings which carry out related loading or unloading:

☐ by road

☐ by rail

☐ by inland waterway

Issued by: . . . .

Date: . . . .

Signature: . . . .

Extended until: . . . .

By: . . . .

Date: . . . .

Signature: . . . .

([1]) Official Journal of the European Communities, OJ L 145, 19.6.1996, p. 10.
([2]) Official Journal of the European Communities, OJ L 118, 19.5.2000, p. 14.

1.8.4. (Reserved)

1.8.5. *Reports on accidents or incidents*

1.8.5.1. If a serious accident or incident takes place during the carriage of dangerous goods on the territory of a Member State, the carrier and, if necessary, the railway infrastructure manager, is required to make a report to the competent authority of the Member State concerned.

1.8.5.2. (Reserved)

CHAPTER 1.9

Restrictions on carriage imposed by the competent authority(ies)

1.9.1. The Competent Authorities of Member States may prohibit, or impose certain conditions on, the carriage of certain dangerous goods on sections with special and local risks. Where possible, the Competent Authorities shall establish alternative routes to be used in place of each prohibited route or each route subject to special conditions.

1.9.2. Member States shall lay down uniform conditions for the measures referred to in 1.9.1 and for those concerning communications with the States, carriers and railway infrastructure managers.

Part 2

CLASSIFICATION

CHAPTER 2.1

General requirements

2.1.1. *Introduction*

2.1.1.1. The classes of dangerous goods according to this Directive are the following:

Class 1	Explosive substances and articles
Class 2	Gases
Class 3	Flammable liquids
Class 4.1	Flammable solids, self-reactive substances and solid desensitized explosives
Class 4.2	Substances liable to spontaneous combustion
Class 4.3	Substances which, in contact with water, emit flammable gases
Class 5.1	Oxidizing substances
Class 5.2	Organic peroxides
Class 6.1	Toxic substances
Class 6.2	Infectious substances
Class 7	Radioactive material
Class 8	Corrosive substances
Class 9	Miscellaneous dangerous substances and articles

2.1.1.2. Each entry in the different classes has been assigned a UN number. The following types of entries are used:

A. Single entries for well defined substances or articles including entries for substances covering several isomers, e.g.:

UN No 1090 ACETON

UN No 1104 AMYL ACETATES

UN No 1194 ETHYL NITRITE SOLUTION

B. Generic entries for a well defined group of substances or articles, which are not n.o.s. entries, e.g.:

UN No 1133 ADHESIVES

UN No 1266 PERFUMERY PRODUCTS

UN No 2757 CARBAMATE PESTICIDE, SOLID, TOXIC

UN No 3101 ORGANIC PEROXIDE TYPE B, LIQUID

C. Specific n.o.s. entries covering a group of substances or articles of a particular chemical or technical nature, not otherwise specified, e.g.:

UN No 1477 NITRATES, INORGANIC, N.O.S.

UN No 1987 ALCOHOLS, N.O.S.

D. General n.o.s. entries covering a group of substances or articles having one or more dangerous properties, not otherwise specified, e.g.:

UN No 1325 FLAMMABLE SOLID, ORGANIC, N.O.S.

UN No 1993 FLAMMABLE LIQUID, N.O.S.

The entries defined under B, C and D are defined as collective entries.

2.1.1.3. For packing purposes, certain substances may be assigned to packing groups in accordance with their degree of danger. The packing groups have the following meanings:

Packing group I: Substances presenting high danger

Packing group II: Substances presenting medium danger

Packing group III: Substances presenting low danger

2.1.2. *Principles of classification*

2.1.2.1. The dangerous goods covered by the heading of a class are defined on the basis of their properties according to sub-section 2.2.x.1 of the relevant class. Assignment of dangerous goods to a class and a packing group is made according to the criteria mentioned in the same sub-section 2.2.x.1. Assignment of one or several subsidiary risk(s) to a dangerous substance or article is made according to the criteria of the class or classes corresponding to those risks, as mentioned in the appropriate sub-section(s) 2.2.x.1.

2.1.2.2. All dangerous goods entries are listed in table A of Chapter 3.2 in the numerical order of their UN Number. This table contains relevant information on the goods listed, such as name, class, packing group(s), label(s) to be affixed, packing and carriage requirements.

NOTE: An alphabetical list of these entries is given in table B of Chapter 3.2.

2.1.2.3. Dangerous goods which are listed or defined in sub-section 2.2.x.2 of each class are not to be accepted for carriage.

2.1.2.4. Goods not mentioned by name, i.e. goods not listed as single entries in table A of Chapter 3.2 and not listed or defined in one of the above-mentioned sub-sections 2.2.x.2 shall be assigned to the relevant class in accordance with the procedure in 2.1.3. In addition, the subsidiary risk (if any) and the packing group (if any) shall be determined. Once the class, subsidiary risk (if any) and packing group (if any) have been established the relevant UN number shall be determined. The decision trees in sub-sections 2.2.x.3 (list of collective entries) at the end of each class indicate the relevant parameters for selecting the relevant collective entry (UN number). In all cases the most specific collective entry covering the properties of the substance or article shall be selected, according to the hierarchy indicated in 2.1.1.2 by the letters B, C and D respectively. If the substance or article cannot be classified under entries of type B or C according to 2.1.1.2, then, and only then shall it be classified under an entry of type D.

2.1.2.5. On the basis of the test procedures of Chapter 2.3 and the criteria set out in sub-sections 2.2.x.1 of classes when it is so specified, it may be determined that a substance, solution or mixture of a certain class, mentioned by name in Table A of Chapter 3.2, does not meet the criteria of that class. In such a case, the substance, solution or mixture is deemed not to belong to that class.

2.1.2.6. For the purposes of classification, substances with a melting point or initial melting point of 20 °C or lower at a pressure of 101,3 kPa shall be considered to be liquids. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test or to the test for determining fluidity (penetrometer test) prescribed in 2.3.4.

2.1.3. *Classification of substances, including solutions and mixtures (such as preparations and wastes), not mentioned by name*

2.1.3.1. Substances, including solutions and mixtures, not mentioned by name shall be classified according to their degree of danger on the basis of the criteria mentioned in sub-section 2.2.x.1 of the various classes. The danger(s) presented by a substance shall be determined on the basis of its physical and chemical characteristics and physiological properties. Such characteristics and properties shall also be taken into account when such experience leads to a more stringent assignment.

2.1.3.2. A substance not mentioned by name in table A of Chapter 3.2 presenting a single hazard shall be classified in the relevant class under a collective entry listed in sub-section 2.2.x.3 of that class.

2.1.3.3. A solution or mixture containing only one dangerous substance mentioned by name in table A of Chapter 3.2, together with one or more non-dangerous substance(s), shall be regarded as the dangerous substance listed by name, unless:

(a) the solution or mixture is specifically mentioned by name in table A of Chapter 3.2; or

(b) it is quite clear from the entry for the dangerous substance that it is applicable only to the pure or technically pure substance; or

(c) the class, physical state or packing group of the solution or mixture is different from that of the dangerous substance.

In the case of (b) or (c), the solution or mixture shall be classified as a substance mentioned by name in the relevant class under a collective entry according to sub-section 2.2.x.3 of that class, taking account of any subsidiary risks, unless the substance or mixture does not meet the criteria of a particular class and is not therefore subject to the requirements of this Directive.

2.1.3.4. Solutions and mixtures containing one of the following substances mentioned by name shall always be classified under the same entry as the substance they contain, provided they do not have the hazard characteristics as indicated in 2.1.3.5:

— Class 3

UN No 1921 PROPYLENEIMINE, INHIBITED;

UN No 2481 ETHYLISOCYANATE;

UN No 3064 NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1 % but not more than 5 % nitroglycerin

— Class 6.1

UN No 1051 HYDROGEN CYANIDE, STABILIZED, containing less than 3 % water;

UN No 1185 ETHYLENEIMINE, INHIBITED;

UN No 1259 NICKEL CARBONYL;

UN No 1613 HYDROGEN CYANIDE, AQUEOUS SOLUTION (hydrocyanic acid), with not more than 20 % hydrogen cyanide;

UN No 1614 HYDROGEN CYANIDE, STABILIZED, containing not more than 3 % water and absorbed in a porous inert material;

UN No 1994 PENTACARBONYL;

UN No 2480 METHYL ISOCYANATE;

UN No 3294 HYDROGEN CYANIDE, SOLUTION IN ALCOHOL, with not more than 45 % hydrogen cyanide

— Class 8

UN No 1052 HYDROGEN FLUORIDE, ANHYDROUS;

UN No 1744 BROMINE or UN No 1744 BROMINE SOLUTION;

UN No 1790 HYDROFLUORIC ACID with more than 85 % hydrogen fluoride;

UN No 2576 PHOSPHORUS OXYBROMIDE, MOLTEN

— Class 9

UN No 2315 POLYCHLORINATED BIPHENYLS;

UN No 3151 POLYHALOGENATED BIPHENYLS, LIQUID or

UN No 3151 POLYHALOGENATED TERPHENYLS, LIQUID;

UN No 3152 POLYHALOGENATED BIPHENYLS, SOLID or

UN No 3152 POLYHALOGENATED TERPHENYLS, SOLID,

unless they contain one of the substances of Class 3 or Class 6.1 or Class 8 listed above; in which case they shall be classified accordingly.

2.1.3.5. Substances not mentioned by name in table A of Chapter 3.2, having more than one hazard characteristic and solutions or mixtures containing several dangerous substances shall be classified under a collective entry (see 2.1.2.4) and packing group of the appropriate class in accordance with their hazard characteristics. Such classification according to the hazard characteristics shall be carried out as follows:

2.1.3.5.1. The physical and chemical characteristics and physiological properties shall be determined by measurement or calculation and the substance, solution or mixture shall be classified according to the criteria mentioned in sub-section 2.2.x.1 of the various classes.

2.1.3.5.2. If this determination is not possible without disproportionate cost or effort (as for some kinds of wastes), the substance, solution or mixture shall be classified in the class of the component presenting the major hazard.

2.1.3.5.3. If the hazard characteristics of the substance, solution or mixture fall within more than one class or group of substances listed below then the substance, solution or mixture shall be classified in the class or group of substances corresponding to the major hazard on the basis of the following order of precedence:

(a) Material of Class 7 (apart from radioactive material in excepted packages where the other hazardous properties take precedence);

(b) Substances of Class 1;

(c) Substances of Class 2;

(d) Liquid desensitized explosives of Class 3;

(e) Self-reactive substances and solid desensitized explosives of Class 4.1;

(f) Pyrophoric substances of Class 4.2;

(g) Substances of Class 5.2;

(h) Substances of Class 6.1 or Class 3 which, on the basis of their inhalation toxicity, are to be classified under Packing group I (substances meeting the classification criteria of Class 8 and having an inhalation toxicity of dust and mist (LC_{50}) in the range of Packing group I and a toxicity through oral ingestion or dermal contact only in the range of Packing group III or less, shall be allocated to Class 8);

(i) Infectious substances of Class 6.2.

2.1.3.5.4. If the hazard characteristics of the substance fall within more than one class or group of substances not listed in 2.1.3.5.3 above, the substance shall be classified in accordance with the same procedure but the relevant class shall be selected according to the precedence of hazards table in 2.1.3.9.

2.1.3.6. The most specific applicable generic entry (see 2.1.2.4) shall always be used, i.e. a general n.o.s. entry shall only be used if a generic entry or a specific n.o.s. entry cannot be used.

2.1.3.7. Solutions and mixtures of oxidizing substances or substances with an oxidizing subsidiary risk may have explosive properties. In such a case they are not to be accepted for carriage unless they meet the requirements for Class 1.

2.1.3.8. For the purposes of this Directive, substances, solutions and mixtures (such as preparations and wastes) which cannot be assigned to Classes 1 to 8 or Class 9 entries other than UN Nos 3077 and 3082, but which may be assigned to UN Nos 3077 or 3082 on the basis of the test methods and criteria of section 2.3.5 shall be considered to be pollutant to the aquatic environment. Solutions and mixtures (such as preparations and wastes) for which no data conforming to the classification criteria are available shall be considered to be pollutant to the aquatic environment if the LC_{50} (see definitions in 2.3.5.1, 2.3.5.2 and 2.3.5.3) evaluated according to the following formula:

$$LC_{50} = \frac{LC_{50} \text{ of the pollutant x } 100}{\text{percentage of the pollutant (by mass)}}$$

is equal to or lower than:

(a) 1 mg/l; or

(b) 10 mg/l if the pollutant is not readily biodegradable or, being biodegradable, has a log $P_{ow} \geq 3{,}0$

(see also 2.3.5.6)

2.1.3.9. Precedence of hazards table

Class and packing group	4.1, II	4.1, III	4.2, II	4.2, III	4.3, I	4.3, II	4.3, III	5.1, I	5.1, II	5.1, III	6.1, I DERMAL	6.1, I ORAL	6.1, II	6.1, III	8, I	8, II	8, III	9
3, I	SOL LIQ 4.1 3, I	SOL LIQ 4.1 3, I	SOL LIQ 4.2 3, I	SOL LIQ 4.2 3, I	4.3, I	4.3, I	4.3, I	SOL LIQ 5.1, I 3, I	SOL LIQ 5.1, I 3, I	SOL LIQ 5.1, I 3, I	3, I	3, I	3, I	3, I	3, I	3, I	3, I	3, I
3, II	SOL LIQ 4.1 3, II	SOL LIQ 4.1 3, II	SOL LIQ 4.2 3, II	SOL LIQ 4.2 3, II	4.3, I	4.3, II	4.3, II	SOL LIQ 5.1, I 3, I	SOL LIQ 5.1, II 3, II	SOL LIQ 5.1, II 3, II	3, I	3, I	3, II	3, II	8, I	3, II	3, II	3, II
3, III	SOL LIQ 4.1 3, II	SOL LIQ 4.1 3, III	SOL LIQ 4.2 3, II	SOL LIQ 4.2 3, III	4.3, I	4.3, II	4.3, III	SOL LIQ 5.1, I 3, I	SOL LIQ 5.1, II 3, II	SOL LIQ 5.1, III 3, III	6.1, I	6.1, I	6.1, II	3, III (*)	8, I	8, II	3, III	3, III
4.1, II			4.2, II	4.2, II	4.3, I	4.3, II	4.3, II	5.1, I	4.1, II	4.1, II	6.1, I	6.1, I	SOL LIQ 4.1, II 6.1, II	SOL LIQ 4.1, II 6.1, II	8, I	SOL LIQ 4.1, II 8, II	SOL LIQ 4.1, II 8, II	4.1, II
4.1, III			4.2, II	4.2, III	4.3, I	4.3, II	4.3, III	5.1, I	4.1, II	4.1, III	6.1, I	6.1, I	6.1, II	SOL LIQ 4.1, III 6.1, III	8, I	8, II	SOL LIQ 4.1, III 8, III	4.1, III
4.2, II					4.3, I	4.3, II	4.3, II	5.1, I	4.2, II	4.2, II	6.1, I	6.1, I	4.2, II	4.2, II	8, I	4.2, II	4.2, II	4.2, II
4.2, III					4.3, I	4.3, II	4.3, III	5.1, I	5.1, II	4.2, III	6.1, I	6.1, I	6.1, II	4.2, III	8, I	8, II	4.2, III	4.2, III
4.3, I								5.1, I	4.3, I	4.3, I	6.1, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I
4.3, II								5.1, I	4.3, II	4.3, II	6.1, I	4.3, I	4.3, II	4.3, II	8, I	4.3, II	4.3, II	4.3, II
4.3, III								5.1, I	5.1, II	4.3, III	6.1, I	6.1, I	6.1, II	4.3, III	8, I	8, II	4.3, III	4.3, III
5.1, I											5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I
5.1, II											6.1, I	5.1, I	5.1, II	5.1, II	8, I	5.1, II	5.1, II	5.1, II
5.1, III											6.1, I	6.1, I	6.1, II	5.1, III	8, I	8, II	5.1, III	5.1, III
6.1, I DERMAL															SOL LIQ 6.1, I 8, I	6.1, I	6.1, I	6.1, I
6.1, I ORAL															SOL LIQ 6.1, I 8, I	6.1, I	6.1, I	6.1, I

Class and packing group	4.1, II	4.1, III	4.2, II	4.2, III	4.3, I	4.3, II	4.3, III	5.1, I	5.1, II	5.1, III	6.1, I DERMAL	6.1, I ORAL	6.1, II	6.1, III	8, I	8, II	8, III	9
6.1, II INHAL															SOL LIQ 6.1, I 8, I	6.1, II	6.1, II	6.1, II
6.1, II DERMAL															SOL LIQ 6.1, I 8, I	SOL LIQ 6.1, II 8, II	6.1, II	6.1, II
6.1, II ORAL															8,1	SOL LIQ 6.1, II 8, II	6.1, II	6.1, II
6.1, III															8, I	8, II	8, III	6.1, III
8, I																		8, I
8, II																		8, II
8, III																		8, III

SOL = Solids and mixtures
LIQ = Liquids, mixtures and solutions
DERMAL = Dermal toxicity
ORAL = Oral toxicity
INHAL = Inhalation toxicity
(*) Class 6.1 for pesticides.

NOTE: 1. Examples to explain the use of the table

Classification of a single substance

Description of the substance to be classified:

An amine not mentioned by name meeting the criteria for Class 3, packing group II as well as those for Class 8, packing group I.

Procedure:

The intersection of line 3 II with column 8 I gives 8 I.

This amine has therefore to be classified in Class 8 under:

UN No 2734 AMINES LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or UN No 2734 POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. packing group I

Classification of a mixture

Description of the mixture to be classified:

Mixture consisting of a flammable liquid classified in Class 3, packing group III, a toxic substance in Class 6.1, packing group II and a corrosive substance in Class 8, packing group I.

Procedure:

The intersection of line 3 III with column 6.1 II gives 6.1 II.

The intersection of line 6.1 II with column 8 I LIQ gives 8 I.

This mixture has therefore to be classified in Class 8 under:

UN No 2922 CORROSIVE LIQUID, TOXIC, N.O.S. packing group I.

2. *Examples for the classification of mixtures and solutions under a class and a packing group:*

A phenol solution of Class 6.1, (II), in benzene of Class 3, (II) is to be classified in Class 3, (II); this solution is to be classified under UN No 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., Class 3, (II), by virtue of the toxicity of the phenol.

A solid mixture of sodium arsenate of Class 6.1, (II) and sodium hydroxide of Class 8, (II) is to be classified under UN No 3290 TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S., in Class 6.1 (II).

A solution of crude or refined naphthalene of Class 4.1, (III) in petrol of Class 3, (II), is to be classified under UN No 3295 HYDROCARBONS, LIQUID, N.O.S. in Class 3, (II).

A mixture of hydrocarbons of Class 3, (III), and of polychlorinated biphenyls (PCB) of Class 9, (II), is to be classified under UN No 2315 POLYCHLORINATED BIPHENYLS in Class 9, (II).

A mixture of propyleneimine of Class 3, and polychlorinated biphenyls (PCB) of Class 9, (II), is to be classified under UN No 1921 PROPYLENEIMINE, INHIBITED in Class 3.

2.1.4. *Classification of samples*

2.1.4.1. When the class of a substance is uncertain and it is being carried for further testing, a provisional class, proper shipping name and UN number shall be assigned on the basis of the consignor's knowledge of the substance and application of:

(a) the classification criteria of Chapter 2.2; and

(b) the requirements of this Chapter.

The most severe packing group possible for the proper shipping name chosen shall be used.

Where this requirement is used the proper shipping name shall be supplemented with the word 'sample' (e.g., FLAMMABLE LIQUID, N.O.S., Sample). In certain instances, where a specific proper shipping name is provided for a sample of a substance considered to meet certain classification criteria (e.g., GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, UN 3167) that proper shipping name shall be used. When an N.O.S. entry is used to carry the sample, the proper shipping name need not be supplemented with the technical name as required by Chapter 3.3, special provision 274.

2.1.4.2. Samples of the substance shall be carried in accordance with the requirements applicable to the provisionally assigned proper shipping name, provided:

(a) The substance is not considered to be a substance prohibited for transport under 2.2.x.2 of Chapter 2.2 or under Chapter 3.2;

(b) The substance is not considered to meet the criteria for Class 1 or considered to be an infectious substance or a radioactive material;

(c) The substance is in compliance with 2.2.41.1.15 or 2.2.52.1.9 if it is a self-reactive substance or an organic peroxide, respectively;

(d) The sample is carried in a combination packaging with a net mass per package not exceeding 2,5 kg; and

(e) The sample is not packed together with other goods.

CHAPTER 2.2

Class Specific Requirements

2.2.1. *Class 1 Explosive substances and articles*

2.2.1.1. Criteria

2.2.1.1.1. The heading of Class 1 covers:

(a) Explosive substances: solid or liquid substances (or mixtures of substances) capable by chemical reaction of producing gases at such a temperature and pressure and at such a speed as to cause damage to the surroundings.

Pyrotechnic substances: substances or mixtures of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonating self-sustaining exothermic chemical reactions.

NOTES:

1. Substances which are not themselves explosive but which may form an explosive mixture of gas, vapour or dust are not substances of Class 1.

2. Also excluded from Class 1 are: water- or alcohol-wetted explosives of which the water or alcohol content exceeds the limits specified and those containing plasticizers — these explosives are assigned to Class 3 or Class 4.1 — and those explosives which, on the basis of their predominant hazard, are assigned to Class 5.2.

(b) Explosive articles: articles containing one or more explosive substances or pyrotechnic substances.

NOTE: Devices containing explosive or pyrotechnic substances in such small quantity or of such a character that their inadvertent or accidental ignition or initiation during carriage would not cause any manifestation external to the device by projection, fire, smoke, heat or loud noise are not subject to the requirements of Class 1.

(c) Substances and articles not mentioned above which are manufactured with a view to producing a practical effect by explosion or a pyrotechnic effect.

2.2.1.1.2. Any substance or article having or suspected of having explosive properties shall be considered for assignment to Class 1 in accordance with the tests, procedures and criteria prescribed in Part I, Manual of Tests and Criteria.

A substance or article assigned to Class 1 can only be accepted for carriage when it has been assigned to a name or n.o.s. entry listed in table A of Chapter 3.2 and meets the criteria of the Manual of Tests and Criteria.

2.2.1.1.3. The substances and articles of Class 1 shall be assigned to a UN Number and a name or n.o.s. entry listed in table A of Chapter 3.2. Interpretation of the names of substances and articles in table A of Chapter 3.2 shall be based upon the glossary in 2.2.1.1.7.

Samples of new or existing explosive substances or articles carried for purposes including: testing, classification, research and development quality control, or as a commercial sample, other than initiating explosive, may be assigned to UN No 0190 SAMPLES, EXPLOSIVE.

The assignment of substances and articles not mentioned by name as such in table A of Chapter 3.2 to an n.o.s. entry or UN No 0190 SAMPLES, EXPLOSIVE as well as the assignment of certain substances the carriage of which is subject to a specific authorization by the competent authority according to the special requirements referred to in column (6) of table A of Chapter 3.2 shall be made by the competent authority of the country of origin. This competent authority shall also approve in writing the conditions of carriage of these substances and articles. If the country of origin is not a COTIF Member State, the classification and the conditions of carriage shall be recognized by the competent authority of the first COTIF Member State reached by the consignment.

2.2.1.1.4. Substances and articles of Class 1 shall be assigned to a division in accordance with 2.2.1.1.5 and to a compatibility group in accordance with 2.2.1.1.6. The division shall be based on the results of the tests described in section 2.3.0 and 2.3.1 applying the definitions in 2.2.1.1.5. The compatibility group shall be determined in accordance with the definitions in 2.2.1.1.6. The classification code shall consist of the division number and the compatibility group letter.

2.2.1.1.5. Definition of divisions

Division 1.1 Substances and articles which have a mass explosion hazard (a mass explosion is an explosion which affects almost the entire load virtually instantaneously).

Division 1.2 Substances and articles which have a projection hazard but not a mass explosion hazard.

Division 1.3 Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard:

(a) combustion of which gives rise to considerable radiant heat; or

(b) which burn one after another, producing minor blast or projection effects or both.

Division 1.4 Substances and articles which present only a slight risk of explosion in the event of ignition or initiation during carriage. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package.

Division 1.5. Very insensitive substances having a mass explosion hazard which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of carriage. As a minimum requirement they shall not explode in the external fire test.

Division 1.6 Extremely insensitive articles which do not have a mass explosion hazard. The articles contain only extremely insensitive detonating substances and demonstrate a negligible probability of accidental initiation or propagation.

NOTE: The risk from articles of Division 1.6 is limited to the explosion of a single article.

2.2.1.1.6. Definition of compatibility groups of substances and articles

A Primary explosive substance

B Article containing a primary explosive substance and having not more than two effective protective features. Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not contain primary explosives.

C Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance.

D Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and having two or more effective protective features.

E Article containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids).

F Article containing a secondary detonating explosive substance with its own means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids) or without a propelling charge.

G Pyrotechnic substance, or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one which contains white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel or hypergolic liquids).

H Article containing both an explosive substance and white phosphorus.

J Article containing both an explosive substance and a flammable liquid or gel.

K Article containing both an explosive substance and a toxic chemical agent.

L Explosive substance or article containing an explosive substance and presenting a special risk (e.g. due to water activation or the presence of hypergolic liquids, phosphides or a pyrophoric substance) necessitating isolation of each type.

N Articles containing only extremely insensitive detonating substances.

S Substance or article so packed or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder or prevent fire-fighting or other emergency response efforts in the immediate vicinity of the package.

NOTES:

1. Each substance or article, packed in a specified packaging, may be assigned to one compatibility group only. Since the criterion of compatibility group S is empirical, assignment to this group is necessarily linked to the tests for assignment of a classification code.

2. Articles of compatibility groups D and E may be fitted or packed together with their own means of initiation provided that such means have at least two effective protective features designed to prevent an explosion in the event of accidental functioning of the means of initiation. Such packages shall be assigned to compatibility groups D or E.

3. Articles of compatibility groups D and E may be packed together with their own means of initiation, which do not have two effective protective features (i.e. means of initiation assigned to compatibility group B), provided that they comply with mixed packing provision MP 21 of section 4.1.10. Such packages shall be assigned to compatibility groups D or E.

4. Articles may be fitted or packed together with their own means of ignition provided that the means of ignition cannot function during normal conditions of carriage.

5. Articles of compatibility groups C, D and E may be packed together. Such packages shall be assigned to compatibility group E.

2.2.1.1.7. Glossary of names

NOTES:

1. The descriptions in the glossary are not intended to replace the test procedures, nor to determine the hazard classification of a substance or article of Class 1. Assignment to the correct division and a decision on whether Compatibility Group S is appropriate shall be based on testing of the product in accordance with the Manual of Tests and Criteria, Part I or by analogy with similar products which have already been tested and assigned in accordance with the procedures of the Manual of Tests and Criteria.

2. The figures given after the names refer to the relevant UN numbers (Column 2 of table A of Chapter 3.2). For the classification code, see 2.2.1.1.4.

AIR BAG INFLATORS, PYROTECHNIC or AIR BAG MODULES, PYROTECHNIC or SEAT-BELT PRETENSIONERS, PYROTECHNIC: UN No 0503.

Articles containing pyrotechnic substances and used as vehicle airbags or safety belts to protect people.

AMMUNITION, ILLUMINATING, with or without burster, expelling charge or propelling charge: UN Nos 0171, 0254, 0297

Ammunition designed to produce a single source of intense light for lighting up an area. The term includes illuminating cartridges, grenades and projectiles; and illuminating and target identification bombs.

NOTE: The following articles: CARTRIDGES, SIGNAL; SIGNAL DEVICES HAND; SIGNALS, DISTRESS; FLARES, AERIAL; FLARES, SURFACE are not included in this definition. They are listed separately.

AMMUNITION, INCENDIARY, liquid or gel, with burster, expelling charge or propelling charge: UN No 0247

Ammunition containing liquid or gelatinous incendiary substance. Except when the incendiary substance is an explosive per se, it also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge.

AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge: UN Nos 0243, 0244

Ammunition containing white phosphorus as incendiary substance. It also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge.

AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge: UN Nos 0009, 0010, 0300

Ammunition containing incendiary composition. Except when the composition is an explosive per se, it also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge.

AMMUNITION, PRACTICE: UN Nos 0362, 0488

Ammunition without a main bursting charge, containing a burster or expelling charge. Normally it also contains a fuze and a propelling charge.

NOTE: GRENADES, PRACTICE are not included in this definition. They are listed separately.

AMMUNITION, PROOF: UN No 0363

Ammunition containing pyrotechnic substances, used to test the performance or strength of new ammunition, weapon components or assemblies.

AMMUNITION, SMOKE, WHITE PHOSPHORUS, with burster, expelling charge or propelling charge: UN Nos 0245, 0246

Ammunition containing white phosphorus as a smoke-producing substance. It also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge. The term includes grenades, smoke.

AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge: UN Nos 0015, 0016, 0303

Ammunition containing a smoke-producing substance such as chlorosulphonic acid mixture or titanium tetrachloride; or a smoke-producing pyrotechnic composition based on hexachloroethane or red phosphorus. Except when the substance is an explosive *per se*, the ammunition also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge. The term includes grenades, smoke.

NOTE: SIGNALS, SMOKE are not included in this definition. They are listed separately.

AMMUNITION, TEAR-PRODUCING, with burster, expelling charge or propelling charge: UN Nos 0018, 0019, 0301

Ammunition containing a tear-producing substance. It also contains one or more of the following: a pyrotechnic substance; a propelling charge with primer and igniter charge; a fuze with burster or expelling charge.

ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES EEI): UN No 0486

Articles containing only extremely insensitive detonating substances (EIDS) which demonstrate a negligible probability of accidental initiation or propagation under normal conditions of transport, and which have passed Test Series 7.

ARTICLES, PYROPHORIC: UN No 0380

Articles which contain a pyrophoric substance (capable of spontaneous ignition when exposed to air) and an explosive substance or component. The term excludes articles containing white phosphorus.

ARTICLES, PYROTECHNIC, for technical purposes: UN Nos 0428, 0429, 0430, 0431, 0432

Articles which contain pyrotechnic substances and are used for technical purposes such as heat generation, gas generation, theatrical effects, etc.

NOTE: The following articles: all ammunition; CARTRIDGES, SIGNAL; CUTTERS, CABLE, EXPLOSIVE; FIREWORKS; FLARES, AERIAL; FLARES, SURFACE; RELEASE DEVICES, EXPLOSIVE; RIVETS, EXPLOSIVE; SIGNAL DEVICES, HAND; SIGNALS, DISTRESS; SIGNALS, RAILWAY TRACK, EXPLOSIVES; SIGNALS, SMOKE are not included in this definition. They are listed separately.

BLACK POWDER (GUNPOWDER), COMPRESSED or BLACK POWDER (GUNPOWDER), IN PELLETS: UN No 0028

Substance consisting of a pelletized form of black powder.

BLACK POWDER (GUNPOWDER), granular or as meal: UN No 0027

Substance consisting of an intimate mixture of charcoal or other carbon and either potassium nitrate or sodium nitrate, with or without sulphur.

BOMBS, WITH FLAMMABLE LIQUID, with bursting charge: UN Nos 0399, 0400

Articles which are dropped from aircraft, consisting of a tank filled with flammable liquid and bursting charge.

BOMBS, PHOTO-FLASH: UN No 0038

Explosive articles which are dropped from aircraft to provide brief, intense illumination for photography. They contain a charge of detonating explosive without means of initiation or with means of initiation containing two or more effective protective features.

BOMBS, PHOTO-FLASH: UN No 0037

Explosive articles which are dropped from aircraft to provide brief, intense illumination for photography. They contain a charge of detonating explosive with means of initiation not containing two or more effective protective features.

BOMBS, PHOTO-FLASH: UN Nos 0039, 0299

Explosive articles which are dropped from aircraft to provide brief, intense illumination for photography. They contain a photo-flash composition.

BOMBS, with bursting charge: UN Nos 0034, 0035

Explosive articles which are dropped from aircraft, without means of initiation or with means of initiation containing two or more effective protective features.

BOMBS with bursting charge: UN Nos 0033, 0291

Explosive articles which are dropped from aircraft, with means of initiation not containing two or more effective protective features.

BOOSTERS, WITH DETONATOR: UN Nos 0225, 0268

Articles consisting of a charge of detonating explosive with means of initiation. They are used to increase the initiating power of detonators or detonating cord.

BOOSTERS, without detonator: UN Nos 0042, 0283

Articles consisting of a charge of detonating explosive without means of initiation. They are used to increase the initiating power of detonators or detonating cord.

BURSTERS, explosive: UN No 0043

Articles consisting of a small charge of explosive used to open projectiles or other ammunition in order to disperse their contents.

CARTRIDGES, FLASH: UN Nos 0049, 0050

Articles consisting of a casing, a primer and flash powder, all assembled in one piece ready for firing.

CARTRIDGES FOR WEAPONS, BLANK: UN Nos 0014, 0326, 0327, 0338, 0413

Ammunition consisting of a closed cartridge case with a centre or rim fire primer and a charge of smokeless or black powder but no projectile. It produces a loud noise and is used for training, saluting, propelling charge, starter pistols, etc. The term includes ammunition, blank.

CARTRIDGES FOR WEAPONS, INERT PROJECTILE: UN Nos 0012, 0328, 0339, 0417

Ammunition consisting of a projectile without bursting charge but with a propelling charge with or without a primer. The articles may include a tracer, provided that the predominant hazard is that of the propelling charge.

CARTRIDGES FOR WEAPONS, with bursting charge: UN Nos 0006, 0321, 0412

Ammunition consisting of a projectile with a bursting charge without means of initiation or with means of initiation containing two or more effective protective features; and a propelling charge with or without a primer. The term includes fixed (assembled) ammunition, semi-fixed (partially assembled) ammunition and separate loading ammunition when the components are packed together.

CARTRIDGES FOR WEAPONS, with bursting charge: UN Nos 0005, 0007, 0348

Ammunition consisting of a projectile with a bursting charge with means of initiation not containing two or more effective protective features; and a propelling charge with or without a primer. The term includes fixed (assembled) ammunition, semi-fixed (partially assembled) ammunition and separate loading ammunition when the components are packed together.

CARTRIDGES, OIL WELL: UN Nos 0277, 0278

Articles consisting of a thin casing of fibreboard, metal or other material containing only propellant powder which projects a hardened projectile to perforate an oil well casing.

NOTE: CHARGES, SHAPED are not included in this definition. They are listed separately.

CARTRIDGES, POWER DEVICE: UN Nos 0275, 0276, 0323, 0381

Articles designed to accomplish mechanical actions. They consist of a casing with a charge of deflagrating explosive and a means of ignition. The gaseous products of the deflagration produce inflation, linear or rotary motion or activate diaphragms, valves or switches or project fastening devices or extinguishing agents.

CARTRIDGES, SIGNAL: UN Nos 0054, 0312, 0405

Articles designed to fire coloured flares or other signals from signal pistols, etc.

CARTRIDGES SMALL ARMS: UN Nos 0417, 0339, 0012

Ammunition consisting of a cartridge case fitted with a centre or rim fire primer and containing both a propelling charge and solid projectile. They are designed to be fired in weapons of calibre not larger than 19,1 mm. Shot-gun cartridges of any calibre are included in this description.

NOTE: CARTRIDGES, SMALL ARMS, BLANK, are not included in this definition. They are listed separately. Some military small arms cartridges are not included in this definition. They are listed under CARTRIDGES FOR WEAPONS, INERT PROJECTILE.

CARTRIDGES, SMALL ARMS, BLANK: UN Nos 0014, 0327, 0338

Ammunition consisting of a closed cartridge case with a centre or rim fire primer and a charge of smokeless or black powder. The cartridge cases contain no projectiles. The cartridges are designed to be fired from weapons with a calibre of at most 19,1 mm and serve to produce a loud noise and are used for training, saluting, propelling charge, starter pistols, etc.

CASES, CARTRIDGE, EMPTY, WITH PRIMER: UN Nos 0055, 0379

Articles consisting of a cartridge case made of metal, plastics or other non-flammable material, in which the only explosive component is the primer.

CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER: UN Nos 0446, 0447

Articles consisting of a cartridge case made partly or entirely from nitrocellulose.

CHARGES, BURSTING, PLASTICS BONDED: UN Nos 0457, 0458, 0459, 0460

Articles consisting of a charge of detonating explosive, plastics bonded, manufactured in a specific form without a casing and without means of initiation. They are designed as components of ammunition such as warheads.

CHARGES, DEMOLITION: UN No 0048

Articles containing a charge of a detonating explosive in a casing of fibreboard, plastics, metal or other material. The articles are without means of initiation or with means of initiation containing two or more effective protective features.

NOTE: The following articles: BOMBS; MINES; PROJECTILES are not included in this definition. They are listed separately.

CHARGES, DEPTH: UN No 0056

Articles consisting of a charge of detonating explosive contained in a drum or projectile without means of initiation or with means of initiation containing two or more effective protective features. They are designed to detonate under water.

CHARGES, EXPLOSIVE COMMERCIAL without detonator: UN Nos 0442, 0443, 0444, 0445

Articles consisting of a charge of detonating explosive without means of initiation, used for explosive welding, jointing, forming and other metallurgical processes.

CHARGES, PROPELLING, FOR CANNON: UN Nos 0242, 0279, 0414

Charges of propellant in any physical form for separate-loading ammunition for cannon.

CHARGES, PROPELLING: UN Nos 0271, 0272, 0415, 0491

Articles consisting of a charge of a propellant charge in any physical form, with or without a casing, as a component of rocket motors or for reducing the drag of projectiles.

CHARGES, SHAPED, without detonator: UN Nos 0059, 0439, 0440, 0441

Articles consisting of a casing containing a charge of detonating explosive with a cavity lined with rigid material, without means of initiation. They are designed to produce a powerful, penetrating jet effect.

CHARGES, SHAPED, FLEXIBLE, LINEAR: UN Nos 0237, 0288

Articles consisting of a V-shaped core of a detonating explosive clad by a flexible sheath.

CHARGES, SUPPLEMENTARY, EXPLOSIVE: UN No 0060

Articles consisting of a small removable booster placed in the cavity of a projectile between the fuze and the bursting charge.

COMPONENTS, EXPLOSIVE TRAIN, N.O.S.: UN Nos 0382, 0383, 0384, 0461

Articles containing an explosive designed to transmit detonation or deflagration within an explosive train.

CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge: UN Nos 0248, 0249

Articles whose functioning depends upon physico-chemical reaction of their contents with water.

CORD, DETONATING, flexible: UN Nos 0065, 0289

Article consisting of a core of detonating explosive enclosed in spun fabric and a plastics or other covering. The covering is not necessary if the spun fabric is sift-proof.

CORD (FUSE) DETONATING, metal clad: UN Nos 0102, 0290

Article consisting of a core of detonating explosive clad by a soft metal tube with or without protective covering.

CORD (FUSE) DETONATING, MILD EFFECT, metal clad: UN No 0104

Article consisting of a core of detonating explosive clad by a soft metal tube with or without a protective covering. The quantity of explosive substance is so small that only a mild effect is manifested outside the cord.

CORD, IGNITER: UN No 0066

Article consisting of textile yarns covered with black powder or another fast burning pyrotechnic composition and of a flexible protective covering; or it consists of a core of black powder surrounded by a flexible woven fabric. It burns progressively along its length with an external flame and is used to transmit ignition from a device to a charge or primer.

CUTTERS, CABLE, EXPLOSIVE: UN No 0070

Articles consisting of a knife-edged device which is driven by a small charge of deflagrating explosive into an anvil.

DETONATOR ASSEMBLIES, NON-ELECTRIC, for blasting: UN Nos 0360, 0361, 0500

Non-electric detonators assembled with and activated by such means as safety fuse, shock tube, flash tube or detonating cord. They may be of instantaneous design or incorporate delay elements. Detonating relays incorporating detonating cord are included.

DETONATORS, ELECTRIC, for blasting: UN Nos 0030, 0255, 0456

Articles specially designed for the initiation of blasting explosives. These detonators may be constructed to detonate instantaneously or may contain a delay element. Electric detonators are activated by an electric current.

DETONATORS FOR AMMUNITION: UN Nos 0073, 0364, 0365, 0366

Articles consisting of a small metal or plastics tube containing explosives such as lead azide, PETN or combinations of explosives. They are designed to start a detonation train.

DETONATORS, NON-ELECTRIC, for blasting: UN Nos 0029, 0267, 0455

Articles specially designed for the initiation of blasting explosives. These detonators may be constructed to detonate instantaneously or may contain a delay element. Non-electric detonators are activated by such means as shock tube, flash tube, safety fuse, other igniferous device or flexible detonating cord. Detonating relays without detonating cord are included.

EXPLOSIVE, BLASTING, TYPE A: UN No 0081

Substances consisting of liquid organic nitrates such as nitroglycerin or a mixture of such ingredients with one or more of the following: nitrocellulose; ammonium nitrate or other inorganic nitrates; aromatic nitro-derivatives, or combustible materials, such as wood-meal and aluminium powder. They may contain inert components such as kieselguhr, and additives such as colouring agents and stabilizers. Such explosives shall be in powdery, gelatinous or elastic form. The term includes dynamite, gelatine, blasting and gelatine dynamites.

EXPLOSIVE, BLASTING, TYPE B: UN Nos 0082, 0331

Substances consisting of:

(a) a mixture of ammonium nitrate or other inorganic nitrates with an explosive such as trinitrotoluene (TNT), with or without other substances such as wood-meal and aluminium powder; or

(b) a mixture of ammonium nitrate or other inorganic nitrates with other combustible substances which are not explosive ingredients.

In both cases they may contain inert components such as kieselguhr, and additives such as colouring agents and stabilizers. Such explosives must not contain nitroglycerin, similar liquid organic nitrates or chlorates.

EXPLOSIVE, BLASTING, TYPE C: UN No 0083

Substances consisting of a mixture of either potassium or sodium chlorate or potassium, sodium or ammonium perchlorate with organic nitro-derivatives or combustible materials such as wood-meal or aluminium powder or a hydrocarbon. They may contain inert components such as kieselguhr and additives such as colouring agents and stabilizers. Such explosives shall not contain nitroglycerin or similar liquid organic nitrates.

EXPLOSIVE, BLASTING, TYPE D: UN No 0084

Substances consisting of a mixture of organic nitrated compounds and combustible materials such as hydrocarbons and aluminium powder. They may contain inert components such as kieselguhr and additives such as colouring agents and stabilizers. Such explosives shall not contain nitroglycerin, similar liquid organic nitrates, chlorates and ammonium nitrate. The term generally includes plastic explosives.

EXPLOSIVES, BLASTING, TYPE E: UN Nos 0241, 0332

Substances consisting of water as an essential ingredient and high proportions of ammonium nitrate or other oxidizers, some or all of which are in solution. The other constituents may include nitro-derivatives such as trinitrotoluene, hydrocarbons or aluminium powder. They may contain inert components such as kieselguhr and additives such as colouring agents and stabilizers. The term includes explosives, emulsion, explosives, slurry and explosives, watergel.

FIREWORKS: UN Nos 0333, 0334, 0335, 0336, 0337

Pyrotechnic articles designed for entertainment.

FLARES, AERIAL: UN Nos 0093, 0403, 0404, 0420, 0421

Articles containing pyrotechnic substances which are designed to be dropped from an aircraft to illuminate, identify, signal or warn.

FLARES, SURFACE: UN Nos 0092, 0418, 0419

Articles containing pyrotechnic substances which are designed for use on the surface to illuminate, identify, signal or warn.

FLASH POWDER: UN Nos 0094, 0305

Pyrotechnic substance which, when ignited, produces an intense light.

FRACTURING DEVICES, EXPLOSIVE, without detonator, for oil wells: UN No 0099

Articles consisting of a charge of detonating explosive contained in a casing without means of initiation. They are used to fracture the rock around a drill shaft to assist the flow of crude oil from the rock.

FUSE, IGNITER, tubular, metal clad: UN No 0103

Article consisting of a metal tube with a core of deflagrating explosive.

FUSE, NON-DETONATING: UN No 0101

Article consisting of cotton yarns impregnated with fine black powder. It burns with an external flame and is used in ignition trains for fireworks, etc. It can be enclosed in a paper tube to obtain an instantaneous or quickmatch effect.

FUSE, SAFETY: UN No 0105

Article consisting of a core of fine grained black powder surrounded by a flexible woven fabric with one or more protective outer coverings. When ignited, it burns at a predetermined rate without any external explosive effect.

FUZES, DETONATING: UN Nos 0106, 0107, 0257, 0367

Articles with explosive components designed to produce a detonation in ammunition. They incorporate mechanical, electrical, chemical or hydrostatic components to initiate the detonation. They generally incorporate protective features.

FUZES, DETONATING, with protective features: UN Nos 0408, 0409, 0410

Articles with explosive components designed to produce a detonation in ammunition. They incorporate mechanical, electrical, chemical or hydrostatic components to initiate the detonation. The detonating fuze must incorporate two or more effective protective features.

FUZES, IGNITING: UN Nos 0316, 0317, 0368

Articles with primary explosive components designed to produce a deflagration in ammunition. They incorporate mechanical, electrical, chemical or hydrostatic components to start the deflagration. They generally incorporate protective features.

GRENADES, hand or rifle, with bursting charge: UN Nos 0284, 0285

Articles which are designed to be thrown by hand or to be projected by a rifle. They are without means of initiation or with means of initiation containing two or more effective protective features.

GRENADES, hand or rifle, with bursting charge: UN Nos 0292, 0293

Articles which are designed to be thrown by hand or to be projected by a rifle. They are with means of initiation not containing two or more effective protective features.

GRENADES, PRACTICE, hand or rifle: UN Nos 0110, 0318, 0372, 0452

Articles without a main bursting charge which are designed to be thrown by hand or to be projected by a rifle. They contain the priming device and may contain a spotting charge.

HEXOTONAL: UN No 0393

Substance consisting of an intimate mixture of cyclotrimethylene-trinitramine (RDX), trinitrotoluene (TNT) and aluminium.

HEXOLITE (HEXOTOL), dry or wetted with less than 15 % water, by mass: UN No 0118

Substance consisting of an intimate mixture of cyclotrimethylene-trinitramine (RDX) and trinitrotoluene (TNT). The term includes ‘Composition B’.

IGNITERS: UN Nos 0121, 0314, 0315, 0325, 0454

Articles containing one or more explosive substances designed to produce a deflagration in an explosive train. They may be actuated chemically, electrically or mechanically.

NOTE: The following articles: CORD, IGNITER; FUSE, IGNITER; FUSE, INSTANTANEOUS, NON-DETONATING; FUZES, IGNITING; LIGHTERS, FUSE; PRIMERS, CAP TYPE; PRIMERS, TUBULAR are not included in this definition. They are listed separately.

JET PERFORATING GUNS, CHARGED, oil well, without detonator: UN Nos 0124, 0494

Articles consisting of a steel tube or metallic strip, into which are inserted shaped charges connected by detonating cord, without means of initiation.

LIGHTERS, FUSE: UN No 0131

Articles of various design actuated by friction, percussion or electricity and used to ignite safety fuse.

MINES, with bursting charge: UN Nos 0137, 0138

Articles consisting normally of metal or composition receptacles filled with a detonating explosive, without means of initiation or with means of initiation containing two or more effective protective features. They are designed to be operated by the passage of ships, vehicles or personnel. The term includes ‘Bangalore torpedoes’.

MINES, with bursting charge: UN Nos 0136, 0294

Articles consisting normally of metal or composition receptacles filled with a detonating explosive, with means of initiation not containing two or more effective protective features. They are designed to be operated by the passage of ships, vehicles or personnel. The term includes ‘Bangalore torpedoes’.

OCTOLITE (OCTOL), dry or wetted with less than 15 % water, by mass: UN No 0266

Substance consisting of an intimate mixture of cyclotetramethylene-tetranitramine (HMX) and trinitrotoluene (TNT).

OCTONAL: UN No 0496

Substance consisting of an intimate mixture of cyclotetramethylene tetranitramine (HMX), trinitrotoluene (TNT) and aluminium.

PENTOLITE, dry or wetted with less than 15 % water, by mass: UN No 0151

Substance consisting of an intimate mixture of pentaerythrite tetranitrate (PETN) and trinitrotoluene (TNT)

POWDER CAKE (POWDER PASTE), WETTED with not less than 17 % alcohol, by mass. POWDER CAKE (POWDER PASTE), WETTED with not less than 25 % water, by mass: UN Nos 0433, 0159

Substance consisting of nitrocellulose impregnated with not more than 60 % of nitroglycerin or other liquid organic nitrates or a mixture of these.

POWDER, SMOKELESS: UN Nos 0160, 0161

Substance based on nitrocellulose used as propellant. The term includes propellants with a single base (nitrocellulose (NC) alone), those with a double base (such as NC and nitroglycerin/(NG)) and those with a triple base (such as NC/NG/nitroguanidine).

NOTE: Cast, pressed or bag-charges of smokeless powder are listed under CHARGES, PROPELLING, FOR CANNON.

PRIMERS, CAP TYPE: UN Nos 0044, 0377, 0378

Articles consisting of a metal or plastics cap containing a small amount of primary explosive mixture that is readily ignited by impact. They serve as igniting elements in small arms cartridges and in percussion primers for propelling charges.

PRIMERS, TUBULAR: UN Nos 0319, 0320, 0376

Articles consisting of a primer for ignition and an auxiliary charge of deflagrating explosive such as black powder used to ignite the propelling charge in a cartridge case for cannon, etc.

PROJECTILES, inert with tracer: UN Nos 0345, 0424, 0425

Articles such as a shell or bullet, which are projected from a cannon or other gun, rifle or other small arm.

PROJECTILES, with burster or expelling charge: UN Nos 0346, 0347

Articles such as a shell or bullet, which are projected from a cannon or other gun. They are without means of initiation or with means of initiation containing two or more effective protective features. They are used to scatter dyes for spotting or other inert materials.

PROJECTILES, with burster or expelling charge: UN Nos 0426, 0427

Articles such as a shell or bullet, which are projected from a cannon or other gun. They are with means of initiation not containing two or more effective protective features. They are used to scatter dyes for spotting or other inert materials.

PROJECTILES, with burster or expelling charge: UN Nos 0434, 0435

Articles such as a shell or bullet, which are projected from a cannon or other gun, rifle or other small arm. They are used to scatter dyes for spotting or other inert materials.

PROJECTILES, with bursting charge: UN Nos 0168, 0169, 0344

Articles such as a shell or bullet, which are projected from a cannon or other gun. They are without means of initiation or with means of initiation containing two or more effective protective features.

PROJECTILES, with bursting charge: UN Nos 0167, 0324

Articles such as a shell or bullet, which are projected from a cannon or other gun. They are with means of initiation not containing two or more effective protective features.

PROPELLANT, LIQUID: UN Nos 0495, 0497

Substance consisting of a deflagrating liquid explosive, used for propulsion.

PROPELLANT, SOLID: UN Nos 0498, 0499, 0501

Substance consisting of a deflagrating solid explosive, used for propulsion.

RELEASE DEVICES, EXPLOSIVE: UN No 0173

Articles consisting of a small charge of explosive with means of initiation and rods or links. They sever the rods or links to release equipment quickly.

RIVETS, EXPLOSIVE: UN No 0174

Articles consisting of a small charge of explosive inside a metallic rivet.

ROCKET MOTORS: UN Nos 0186, 0280, 0281

Articles consisting of a charge of explosive, generally a solid propellant, contained in a cylinder fitted with one or more nozzles. They are designed to propel a rocket or a guided missile.

ROCKET MOTORS, LIQUID FUELLED: UN Nos 0395, 0396

Articles consisting of a liquid fuel within a cylinder fitted with one or more nozzles. They are designed to propel a rocket or a guided missile.

ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge: UN Nos 0250, 0322

Articles consisting of a hypergolic fuel contained in a cylinder fitted with one or more nozzles. They are designed to propel a rocket or a guided missile.

ROCKETS, LINE THROWING: UN Nos 0238, 0240, 0453

Articles consisting of a rocket motor which is designed to extend a line.

ROCKETS, LIQUID FUELLED, with bursting charge: UN Nos 0397, 0398

Articles consisting of a liquid fuel within a cylinder fitted with one or more nozzles and fitted with a warhead. The term includes guided missiles.

ROCKETS with bursting charge: UN Nos 0181, 0182

Articles consisting of a rocket motor and a warhead without means of initiation or with means of initiation containing two or more effective protective features. The term includes guided missiles.

ROCKETS, with bursting charge: UN Nos 0180, 0295

Articles consisting of a rocket motor and a warhead with means of initiation not containing two or more effective protective features. The term includes guided missiles.

ROCKETS, with expelling charge: UN Nos 0436, 0437, 0438

Articles consisting of a rocket motor and a charge to expel the payload from a rocket head. The term includes guided missiles.

ROCKETS, with inert head: UN No 0183, 0502

Articles consisting of a rocket motor and an inert head. The term includes guided missiles.

SAMPLES, EXPLOSIVE, other than initiating explosive UN No 0190

New or existing explosive substances or articles, not yet assigned to a name in table A of Chapter 3.2 and carried in conformity with the instructions of the competent authority and generally in small quantities, *inter alia*, for the purposes of testing, classification, research and development, or quality control, or as commercial samples.

NOTE: Explosive substances or articles already assigned to another name in table A of Chapter 3.2 are not included in this definition.

SIGNAL DEVICES, HAND: UN Nos 0191, 0373

Portable articles containing pyrotechnic substances which produce visual signals or warnings. The term includes small surface flares such as highway or railway flares and small distress flares.

SIGNALS, DISTRESS, ship: UN Nos 0194, 0195

Articles containing pyrotechnic substances designed to produce signals by means of sound, flame or smoke or any combination thereof.

SIGNALS, RAILWAY TRACK, EXPLOSIVE: UN Nos 0192, 0193, 0492, 0493

Articles containing a pyrotechnic substance which explodes with a loud report when the article is crushed. They are designed to be placed on a rail.

SIGNALS, SMOKE: UN Nos 0196, 0197, 0313, 0487

Articles containing pyrotechnic substances which emit smoke. In addition they may contain devices for emitting audible signals.

SOUNDING DEVICES, EXPLOSIVE: UN Nos 0374, 0375

Articles consisting of a charge of detonating explosive, without means of initiation or with means of initiation containing two or more effective protective features. They are dropped from ships and function when they reach a predetermined depth or the sea bed.

SOUNDING DEVICES, EXPLOSIVE: UN Nos 0204, 0296

Articles consisting of a charge of detonating explosive with means of initiation not containing two or more effective protective features. They are dropped from ships and function when they reach a predetermined depth or the sea bed.

SUBSTANCES, EXPLOSIVE, VERY INSENSITIVE (Substances, EVI), N.O.S.: UN No 0482

Substances presenting a mass explosion hazard but which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport, and which have passed Test Series 5.

TORPEDOES, LIQUID FUELLED, with inert head: UN No 0450

Articles consisting of a liquid explosive system to propel the torpedo through the water, with an inert head.

TORPEDOES, LIQUID FUELLED, with or without bursting charge: UN No 0449

Articles consisting of either a liquid explosive system to propel the torpedo through the water, with or without a warhead; or a liquid non-explosive system to propel the torpedo through the water, with a warhead.

TORPEDOES, with bursting charge: UN No 0451

Articles consisting of a non-explosive system to propel the torpedo through the water, and a warhead without means of initiation or with means of initiation containing two or more effective protective features.

TORPEDOES, with bursting charge: UN No 0329

Articles consisting of an explosive system to propel the torpedo through the water, and a warhead without means of initiation or with means of initiation containing two or more effective protective features.

TORPEDOES, with bursting charge: UN No 0330

Articles consisting of an explosive or non-explosive system to propel the torpedo through the water, and a warhead with means of initiation not containing two or more effective protective features.

TRACERS FOR AMMUNITION: UN Nos 0212, 0306

Sealed articles containing pyrotechnic substances, designed to reveal the trajectory of a projectile.

TRITONAL: UN No 0390

Substance consisting of trinitrotoluene (TNT) mixed with aluminium.

WARHEADS, ROCKET, with burster or expelling charge: UN No 0370

Articles consisting of an inert payload and a small charge of detonating or deflagrating explosive, without means of initiation or with means of initiation containing two or more effective protective features. They are designed to be fitted to a rocket motor to scatter inert material. The term includes warheads for guided missiles.

WARHEADS, ROCKET, with burster or expelling charge: UN No 0371

Articles consisting of an inert payload and a small charge of detonating or deflagrating explosive, with means of initiation not containing two or more effective protective features. They are designed to be fitted to a rocket motor to scatter inert material. The term includes warheads for guided missiles.

WARHEADS, ROCKET, with bursting charge: UN Nos 0286, 0287

Articles consisting of a detonating explosive, without means of initiation or with means of initiation containing two or more effective protective features. They are designed to be fitted to a rocket. The term includes warheads for guided missiles.

WARHEADS, ROCKET, with bursting charge: UN No 0369

Articles consisting of a detonating explosive, with means of initiation not containing two or more effective protective features. They are designed to be fitted to a rocket. The term includes warheads for guided missiles.

WARHEADS, TORPEDO, with bursting charge: UN No 0221

Articles consisting of a detonating explosive, without means of initiation or with means of initiation containing two or more effective protective features. They are designed to be fitted to a torpedo.

2.2.1.2. Substances and articles not accepted for carriage

2.2.1.2.1. Explosive substances which are unduly sensitive according to the criteria of the Manual of Tests and Criteria, Part I, or are liable to spontaneous reaction, as well as explosive substances and articles which cannot be assigned to a name or n.o.s. entry listed in table A of Chapter 3.2, shall not be accepted for carriage.

2.2.1.2.2. Substances of compatibility group A shall not be accepted for carriage by rail (1.1A, UN No 0074, 0113, 0114, 0129, 0130, 0135, 0224 and 0473).

Articles of compatibility group K shall not be accepted for carriage (1.2K, UN No 0020 and 1.3K, UN No 0021).

2.2.1.3. List of collective entries

Classification code (see 2.2.1.1.4)	UN No.	Name of the substance or article
1.1A	0473	SUBSTANCES, EXPLOSIVE, N.O.S. (not accepted for carriage by rail, see 2.2.1.2.2)
1.1B	0461	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.
1.1C	0474	SUBSTANCES, EXPLOSIVE, N.O.S.
	0497	PROPELLANT, LIQUID
	0498	PROPELLANT, SOLID
	0462	ARTICLES, EXPLOSIVE, N.O.S.
1.1D	0475	SUBSTANCES, EXPLOSIVE, N.O.S.
	0463	ARTICLES, EXPLOSIVE, N.O.S.
1.1E	0464	ARTICLES, EXPLOSIVE, N.O.S.
1.1F	0465	ARTICLES, EXPLOSIVE, N.O.S.
1.1G	0476	SUBSTANCES, EXPLOSIVE, N.O.S.
1.1L	0357	SUBSTANCES, EXPLOSIVE, N.O.S.
	0354	ARTICLES, EXPLOSIVE, N.O.S.
1.2B	0382	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.
1.2C	0466	ARTICLES, EXPLOSIVE, N.O.S.
1.2D	0467	ARTICLES, EXPLOSIVE, N.O.S.
1.2E	0468	ARTICLES, EXPLOSIVE, N.O.S.
1.2F	0469	ARTICLES, EXPLOSIVE, N.O.S.

Classification code (see 2.2.1.1.4)	UN No.	Name of the substance or article
1.2L	0358	SUBSTANCES, EXPLOSIVE, N.O.S.
	0248	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge
	0355	ARTICLES, EXPLOSIVE, N.O.S.
1.3C	0132	DEFLAGRATING METAL SALTS OF AROMATIC NITRO-DERIVATIVES, N.O.S.
	0477	SUBSTANCES, EXPLOSIVE, N.O.S.
	0495	PROPELLANT, LIQUID
	0499	PROPELLANT, SOLID
	0470	ARTICLES, EXPLOSIVE, N.O.S.
1.3G	0478	SUBSTANCES, EXPLOSIVE, N.O.S.
1.3L	0359	SUBSTANCES, EXPLOSIVE, N.O.S.
	0249	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge
	0356	ARTICLES, EXPLOSIVE, N.O.S.
1.4B	0350	ARTICLES, EXPLOSIVE, N.O.S.
	0383	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.
1.4C	0479	SUBSTANCES, EXPLOSIVE, N.O.S.
	0351	ARTICLES, EXPLOSIVE, N.O.S.
	0501	PROPELLANT, SOLID
1.4D	0480	SUBSTANCES, EXPLOSIVE, N.O.S.
	0352	ARTICLES, EXPLOSIVE, N.O.S.
1.4E	0471	ARTICLES, EXPLOSIVE, N.O.S.
1.4F	0472	ARTICLES, EXPLOSIVE, N.O.S.
1.4G	0485	SUBSTANCES, EXPLOSIVE, N.O.S.
	0353	ARTICLES, EXPLOSIVE, N.O.S.
1.4S	0481	SUBSTANCES, EXPLOSIVE, N.O.S.
	0349	ARTICLES, EXPLOSIVE, N.O.S.
	0384	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.
1.5D	0482	SUBSTANCES, EXPLOSIVE, VERY INSENSITIVE (SUBSTANCES, EVI) ([a]) N.O.S.
1.6N	0486	ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EEI) ([b])
	0190	SAMPLES, EXPLOSIVE other than initiating explosive
		NOTE: Division and compatibility group shall be defined as directed by the competent authority and according to the principles in 2.2.1.1.4.

([a]) EVI = explosive, very sensitive.
([b]) EEI = explosive, extremely insensitive.

2.2.2. *Class 2 Gases*

2.2.2.1. Criteria

2.2.2.1.1. The heading of Class 2 covers pure gases, mixtures of gases, mixtures of one or more gases with one or more other substances and articles containing such substances.

A gas is a substance which:

(a) at 50 °C has a vapour pressure greater than 300 kPa (3 bar); or

(b) is completely gaseous at 20 °C at the standard pressure of 101,3 kPa.

NOTES:

1. UN No 1052 HYDROGEN FLUORIDE is nevertheless classified in Class 8.

2. A pure gas may contain other components deriving from its production process or added to preserve the stability of the product, provided that the level of these components does not change its classification or its conditions of carriage, such as filling ratio, filling pressure, test pressure.

3. N.O.S. entries in 2.2.2.3 may cover pure gases as well as mixtures.

2.2.2.1.2. The substances and articles of Class 2 are subdivided as follows:

1. Compressed gases: gases having a critical temperature below 20 °C;

2. Liquefied gases: gases having a critical temperature of 20 °C or above;

3. Refrigerated liquefied gases: gases which when carried are partially liquid because of their low temperature;

4. Gases dissolved under pressure: gases which when carried are dissolved in a solvent;

5. Aerosol dispensers and receptacles, small, containing gas (gas cartridges);

6. Other articles containing gas under pressure;

7. Non-pressurized gases subject to special requirements (gas samples).

2.2.2.1.3. Substances and articles of Class 2, classified under an entry in 2.2.2.3 are assigned to one of the following groups according to their hazardous properties, as follows:

A asphyxiant

O oxidizing

F flammable

T toxic

TF toxic, flammable

TC toxic, corrosive

TO toxic, oxidizing

TFC toxic, flammable, corrosive

TOC toxic, oxidizing, corrosive

For gases and gas mixtures presenting hazardous properties associated with more than one group according to the criteria, the groups designated by letter T take precedence over all other groups. The groups designated by letter F take precedence over the groups designated by letters A or O.

NOTES:

1. In the UN Model Regulations, the IMDG Code and the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air, gases are assigned to one of the following three divisions, based on the primary hazard:

   Division 2.1: flammable gases (corresponding to the groups designated by the capital letter F);

   Division 2.2: non-flammable, non-toxic gases (corresponding to the groups designated by the capital letters A or O);

   Division 2.3: toxic gases (corresponding to the groups designated by the capital letter T (i.e. T, TF, TC, TO, TFC and TOC).

2. Aerosols and receptacles, small, containing gas shall be assigned, according to the hazard of the contents, to the letters A to TOC. The contents are considered to be flammable if they include more than 45 % by mass, or more than 250 g, of flammable components. Flammable components are gases which are flammable in air at normal pressure or substances or preparations in liquid form which have a flash-point less than or equal to 100 °C.

3. Corrosive gases are considered to be toxic, and are therefore assigned to the group TC, TFC or TOC.

4. Mixtures containing more than 21 % oxygen by volume shall be classified as oxidizing.

2.2.2.1.4. If a mixture of Class 2 mentioned by name in table A of Chapter 3.2 meets different criteria as mentioned in 2.2.2.1.2 and 2.2.2.1.5, this mixture shall be classified according to the criteria and assigned to an appropriate N.O.S. entry.

2.2.2.1.5. Substances and articles of Class 2 which are not mentioned by name in table A of Chapter 3.2 shall be classified under a collective entry listed in 2.2.2.3 in accordance with 2.2.2.1.2 and 2.2.2.1.3. The following criteria shall apply:

Asphyxiant gases

Gases which are non-oxidizing, non-flammable and non-toxic and which dilute or replace oxygen normally in the atmosphere.

Flammable gases

Gases which at 20 °C and a standard pressure of 101,3 kPa:

(a) are ignitable when in a mixture of 13 % or less by volume with air; or

(b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit.

Flammability shall be determined by tests or by calculation, in accordance with methods adopted by ISO (see ISO 10156:1996).

Where insufficient data are available to use these methods, tests by a comparable method recognized by the competent authority of the country of origin may be used.

If the country of origin is not a COTIF Member State these methods shall be recognized by the competent authority of the first COTIF Member State reached by the consignment.

Oxidizing gases

Gases, which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does. Oxidizing ability is determined either by tests or by calculation methods adopted by ISO (see ISO 10156:1996).

Toxic gases

NOTE: Gases meeting the criteria for toxicity in part or completely owing to their corrosivity are to be classified as toxic. See also the criteria under the heading 'Corrosive gases' for a possible subsidiary corrosivity risk.

Gases which:

(a) are known to be so toxic or corrosive to humans as to pose a hazard to health; or

(b) are presumed to be toxic or corrosive to humans because they have a LC_{50} value for acute toxicity equal to or less than 5 000 ml/m^3 (ppm) when tested in accordance with 2.2.61.1.

In the case of gas mixtures (including vapours of substances from other classes) the following formula may be used:

$$LC_{50}\ \text{Toxic (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{f_i}{T_i}}$$

where f_i = mole fraction of the ith component substance of the mixture;

T_i = toxicity index of the ith component substance of the mixture;

The T_i equals the LC_{50} value as found in ISO 10298:1995.

When no LC_{50} value is listed in ISO 10298:1995, a LC_{50} value available in scientific literature shall be used.

When the LC_{50} value is unknown, the toxicity index is determined by using the lowest LC_{50} value of substances of similar physiological and chemical effects, or through testing if this is the only practical possibility.

Corrosive gases

Gases or gas mixtures meeting the criteria for toxicity completely owing to their corrosivity shall be classified as toxic with a subsidiary corrosivity risk.

A gas mixture that is considered to be toxic due to the combined effects of corrosivity and toxicity has a subsidiary risk of corrosivity when the mixture is known by human experience to be destructive to the skin, eyes or mucous membranes or when the LC_{50} value of the corrosive components of the mixture is equal to or less than 5 000 ml/m^3 (ppm) when the LC_{50} is calculated by the formula:

$$LC_{50}\text{Corrosive (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{fc_i}{Tc_i}}$$

where f_{ci} = mole fraction of the i^{th} corrosive component substance of the mixture;

T_{ci} = toxicity index of the i^{th} corrosive component substance of the mixture;

The T_{ci} equals the LC_{50} value as found in ISO10298:1995.

When no LC_{50} value is listed in ISO 10298:1995, a LC_{50} value available in scientific literature shall be used.

When the LC_{50} value is unknown the toxicity index is determined by using the lowest LC_{50} value of substances of similar physiological and chemical effects, or through testing if this is the only practical possibility.

2.2.2.2. Gases not accepted for carriage

2.2.2.2.1. Chemically unstable substances of Class 2 shall not be accepted for carriage, unless the necessary steps have been taken to prevent all possibility of a dangerous reaction e.g. decomposition, dismutation or polymerisation under normal conditions of transport. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

2.2.2.2.2. The following substances and mixtures shall not be accepted for carriage:

— UN No 2186 HYDROGEN CHLORIDE, REFRIGERATED LIQUID;

— UN No 2421 NITROGEN TRIOXIDE;

— UN No 2455 METHYL NITRITE;

— Refrigerated liquefied gases which cannot be assigned to classification codes 3A, 3O or 3F;

— Gases dissolved under pressure which cannot be classified under UN Nos 1001, 2073 or 3318.

2.2.2.3. List of collective entries

Compressed gases		
Classification Code	UN No.	Name of the substance or article
1A	1979	RARE GASES MIXTURE, COMPRESSED
	1980	RARE GASES AND OXYGEN MIXTURE, COMPRESSED
	1981	RARE GASES AND NITROGEN MIXTURE, COMPRESSED
	1956	COMPRESSED GAS, N.O.S.
1O	3156	COMPRESSED GAS, OXIDIZING, N.O.S.
1F	1964	HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S.
	1954	COMPRESSED GAS, FLAMMABLE, N.O.S.
1T	1955	COMPRESSED GAS, TOXIC, N.O.S.
1TF	1953	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.
1TC	3304	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.
1TO	3303	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.
1TFC	3305	COMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.
1TOC	3306	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.

Liquefied gases		
Classification Code	UN No.	Name of the substance or article
2A	1058	LIQUEFIED GASES, non-flammable, charged with nitrogen, carbon dioxide or air
	1078	REFRIGERANT GAS, N.O.S. such as mixtures of gases, Indicated by the letter R.., which as: MIXTURE F 1, have a vapour pressure at 70 °C not exceeding 1,3 MPa (13 bar) and a density at 50 °C not lower than that of dichlorofluoromethane (1,30 kg/l); MIXTURE F 2, have a vapour pressure at 70 °C not exceeding 1,9 MPa (19 bar) and a density at 50 °C not lower than that of dichlorodifluoromethane (1,21 kg/l); MIXTURE F 3, have a vapour pressure at 70 °C not exceeding 3 MPa (30 bar) and a density at 50 °C not lower than that of chlorodifluoromethane (1,09 kg/l). *NOTE:* Trichlorofluoromethane (REFRIGERANT GAS R 11), 1,1,2-trichloro-1,2,2-trifluoroethane (REFRIGERANT GAS R 113), 1,1,1-trichloro-2,2,2- trifluoroethane (REFRIGERANT GAS R 113a), 1-chloro-1,2,2-trifluoroethane (REFRIGERANT GAS R 133) and 1-chloro-1,1,2-trifluoroethane (REFRIGERANT GAS R 133b) are not substances of Class 2. They may, however, enter into the composition of mixtures F 1 to F 3.
	1968	INSECTICIDE GAS, N.O.S.
	3163	LIQUEFIED GAS, N.O.S.
2O	3157	LIQUEFIED GAS, OXIDIZING, N.O.S.

Liquefied gases		
Classification Code	UN No.	Name of the substance or article
2F	1010	MIXTURES OF 1,3-BUTADIENE AND HYDROCARBONS, STABILIZED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0,525 kg/l. *NOTE:* 1,2-butadiene, stabilized and 1,3-butadiene, stabilized are classified under UN No 1010, see table A of chapter 3.2
	1060	METHYLACETYLENE AND PROPADIENE mixture, STABILIZED such as mixtures of methylacetylene and propadiene with hydrocarbons, which as: MIXTURE P1, contain not more than 63 % methylacetylene and propadiene by volume and not more than 24 % propane and propylene by volume, the percentage of C_4-saturated hydrocarbons being not less than 14 % by volume; and as MIXTURE P2, contain not more than 48 % methylacetylene and propadiene by volume and not more than 50 % propane and propylene by volume, the percentage of C_4-saturated hydrocarbons being not less than 5 % by volume, as well as mixtures of propadiene with 1 to 4 % methylacetylene
	1965	HYDROCARBON GAS mixture, LIQUEFIED, N.O.S such as mixtures, which as: — MIXTURE A, have a vapour pressure at 70 °C not exceeding 1,1 MPa (11 bar) and a density at 50 °C not lower than 0,525 kg/l; — MIXTURE A01, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a relative density at 50 °C not lower than 0,516 kg/l; — MIXTURE A02, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a relative density at 50 °C not lower than 0,505 kg/l; — MIXTURE A 0, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a density at 50 °C not lower than 0,495 kg/l; — MIXTURE A 1, have a vapour pressure at 70 °C not exceeding 2,1 MPa (21 bar) and a density at 50 °C not lower than 0,485 kg/l; — MIXTURE B1 have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a relative density at 50 °C not lower than 0,474 kg/l; — MIXTURE B2 have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a relative density at 50 °C not lower than 0,463 kg/l; — MIXTURE B, have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a density at 50 °C not lower than 0,450 kg/l; — MIXTURE C, have a vapour pressure at 70 °C not exceeding 3,1 MPa (31 bar) and a relative density at 50 °C not lower than 0,440 kg/l; *NOTES:* 1. In the case of the foregoing mixtures, the use of the following names customary in the trade is permitted for describing these substances: for mixture A, A01, A02 and A0: BUTANE; for mixture C: PROPANE. 2. UN No 1075 PETROLEUM GASES, LIQUEFIED may be used as an alternative entry for UN No 1965 HYDROCARBON GAS MIXTURE LIQUEFIED, N.O.S. for carriage prior to or following maritime or air carriage.
	3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.
	3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.

Liquefied gases		
Classification Code	UN No.	Name of the substance or article
2T	1967	INSECTICIDE GAS, TOXIC, N.O.S.
	3162	LIQUEFIED GAS, TOXIC, N.O.S.
2TF	3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.
	3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.
2TC	3308	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.
2TO	3307	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.
2TFC	3309	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.
2TOC	3310	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.

Refrigerated gases		
Classification Code	UN No.	Name of the substance or article
3A	3158	GAS, REFRIGERATED LIQUID, N.O.S.
3O	3311	GAS, REFRIGERATED LIQUID, OXIDIZING, N.O.S.
3F	3312	GAS, REFRIGERATED LIQUID, FLAMMABLE, N.O.S.

Gases, dissolved under pressure		
Classification Code	UN No.	Name of the substance or article
4		Only substances listed in table A of Chapter 3.2 are to be accepted for carriage.

Aerosols and receptacles, small, containing gas		
Classification Code	UN No.	Name of the substance or article
5	1950	AEROSOLS
	2037	RECEPTACLES, SMALL CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable

Other articles containing gas under pressure		
Classification Code	UN No.	Name of the substance or article
6A	3164	ARTICLES, PRESSURIZED, PNEUMATIC (containing non-flammable gas) or
	3164	ARTICLES, PRESSURIZED, HYDRAULIC (containing non-flammable gas)
6F	3150	DEVICES, SMALL, HYDROCARBON GAS POWERED or
	3150	HYDROCARBON GAS REFILLS FOR SMALL DEVICES, with release device

Gas samples		
Classification Code	UN No.	Name of the substance or article
7F	3167	GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, N.O.S., not refrigerated liquid
7T	3169	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S., not refrigerated liquid
7TF	3168	GAS SAMPLE, NON-PRESSURIZED, TOXIC, FLAMMABLE, N.O.S., not refrigerated liquid

2.2.3. *Class 3 Flammable liquids*

2.2.3.1. Criteria

2.2.3.1.1. The heading of Class 3 covers substances and articles containing substances of this Class which:

— are liquids according to subparagraph (a) of the definition for 'liquid' in 1.2.1;

— have at 50 °C a vapour pressure of not more than 300 kPa (3 bar) and are not completely gaseous at 20 °C and at standard pressure of 101,3 kPa; and

— have a flash-point of not more than 61 °C (see 2.3.3.1 for the relevant test).

The heading of Class 3 also covers liquid substances and molten solid substances with a flash-point of more than 61 °C and which are carried or handed over for carriage whilst heated at temperatures equal to or higher than their flash-point. These substances are assigned to UN No 3256.

The heading of Class 3 also covers liquid desensitized explosives. Liquid desensitized explosives are explosive substances which are dissolved or suspended in water or other liquid substances, to form an homogeneous liquid mixture to suppress their explosive properties. Such entries in table A of Chapter 3.2 are UN Nos 1204, 2059, 3064, 3343 and 3357.

NOTES:

1. Substances having a flash-point above 35 °C, non-toxic and non-corrosive, which, under the sustained combustibility test conditions given in sub-section 32.5.2 of Part III of the Manual of Tests and Criteria do not sustain combustion according to the criteria of 32.2.5 of Part III of the Manual of Tests and Criteria, are not substances of Class 3; if, however, these substances are handed over for carriage and carried whilst heated at temperatures equal to or higher than their flash-point, they are substances of Class 3. Flammable liquids which, because of their subsidiary hazardous properties, are listed in other classes or can be assigned to other classes, are not substances of Class 3.

2. By derogation from 2.2.3.1.1 above, diesel fuel, gasoil, heating oil (light) having a flash-point above 61 °C and not more than 100 °C shall be deemed substances of Class 3, UN No 1202.

3. Liquids which are highly toxic on inhalation, having a flash-point below 23 °C and toxic substances, having a flash-point of 23 °C or above are substances of Class 6.1 (see 2.2.61.1).

4. Flammable liquid substances and preparations, used as pesticides, which are highly toxic, toxic or slightly toxic and have a flash-point of 23 °C or above are substances of Class 6.1 (see 2.2.61.1).

5. Corrosive liquids having a flash-point of 23 °C or above are substances of Class 8 (see 2.2.8.1).

6. UN No 2734 AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S., UN No 2734 POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. and UN No 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. highly corrosive and having a boiling point or an initial boiling point exceeding 35 °C are substances of Class 8 (see 2.2.8.1).

2.2.3.1.2. The substances and articles of Class 3 are subdivided as follows:

F Flammable liquids, without subsidiary risk:

F1 Flammable liquids having a flash-point of or below 61 °C

F2 Flammable liquids having a flash-point above 61 °C which are carried or handed over for carriage at or above their flash-point (elevated temperature substances);

FT Flammable liquids, toxic:

FT1 Flammable liquids, toxic

FT2 Pesticides

FC Flammable liquids, corrosive

FTC Flammable liquids, toxic, corrosive

D Liquid desensitized explosives.

2.2.3.1.3. Substances and articles classified in Class 3 are listed in table A of Chapter 3.2. Substances ot mentioned by name in table A of Chapter 3.2 shall be assigned to the relevant entry of 2.2.3.3 and the relevant packing group in accordance with the requirements of this ection. Flammable liquids shall be assigned to one of the following packing groups according to the degree of danger they present for transport:

Packing group I: *substances presenting high danger:* flammable liquids having a boiling oint or initial boiling point not exceeding 35 °C, and flammable iquids having a flash-point below 23 °C, which are either highly toxic according to the criteria of 2.2.61.1 or highly corrosive according to the criteria of 2.2.8.1;

Packing group II: *substances presenting medium danger:* flammable liquids having a flash-point below 23 °C which are not classified under I, with the exception of substances of 2.2.3.1.4;

Packing group III: *substances presenting low danger:* flammable liquids having a flash-point of 23 °C to 61 °C inclusive and substances of 2.2.3.1.4.

2.2.3.1.4. Liquid or viscous mixtures and preparations, including those containing no more than 20 % nitrocellulose with a nitrogen content not exceeding 12,6 % (by dry mass), shall be assigned to packing group III only if the following requirements are met:

(a) the height of the separated layer of solvent is less than 3 % of the total height of the sample in the solvent-separation test (see Manual of Tests and Criteria, Part III, subsection 32.5.1); and

(b) the viscosity ([1]) and flash-point are in accordance with the following table:

Kinematic viscosity (extrapolated) (at near-zero shear rate) mm^2/s at 23 °C	Flow time t in accordance with ISO 2431:1993		Flash-point in °C
	in s	Jet diameter in mm	
$20 < \nu \leq 80$	$20 < t \leq 60$	4	above 17
$80 < \nu \leq 135$	$60 < t \leq 100$	4	above 10
$135 < \nu \leq 220$	$20 < t \leq 32$	6	above 5
$220 < \nu \leq 300$	$32 < t \leq 44$	6	above −1
$300 < \nu \leq 700$	$44 < t \leq 100$	6	above −5
$700 < \nu$	$100 < t$	6	−5 and below

NOTE: Mixtures containing more than 20 % but not more than 55 % nitrocellulose with a nitrogen content not exceeding 12,6 % by dry mass are substances assigned to UN No 2059.

Mixtures having a flash-point below 23 °C and containing:

— more than 55 % nitrocellulose, whatever their nitrogen content; or

— not more than 55 % nitrocellulose with a nitrogen content above 12,6 % by dry mass,

are substances of Class 1 (UN No 0340 or UN No 0342) or of Class 4.1 (UN Nos 2555, 2556 or 2557).

([1]) Viscosity determination: Where the substance concerned is non-Newtonian, or where a flow cup method of viscosity determination is otherwise unsuitable, a variable shear-rate viscometer shall be used to determine the dynamic viscosity coefficient of the substance, at 23 °C, at a number of shear rates. The values obtained are plotted against shear rate and then extrapolated to zero shear rate. The dynamic viscosity thus obtained, divided by the density, gives the apparent kinematic viscosity at near-zero shear rate.

2.2.3.1.5. Non-toxic and non-corrosive solutions and homogeneous mixtures having a flash-point of 23 °C or above (viscous substances, such as paints or varnishes, excluding substances containing more than 20 % nitrocellulose) packed in receptacles of less than 450 litres capacity, are not subject to the requirements of this Directive if, in the solvent-separation test (see Manual of Tests and Criteria, Part III, sub-section 32.5.1), the height of the separated layer of solvent is less than 3 % of the total height, and if the substances at 23 °C have, in the flow cup conforming to ISO 2431:1993 having a jet 6 mm in diameter, a flow time of:

(a) not less than 60 seconds, or

(b) not less than 40 seconds and contain not more than 60 % of substances of Class 3.

2.2.3.1.6. If substances of Class 3, as a result of admixtures, come into categories of risk different from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures or solutions shall be assigned to the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes) see also 2.1.3.

2.2.3.1.7. On the basis of the test procedures in accordance with 2.3.3.1 and 2.3.4, and the criteria set out in 2.2.3.1.1, it may also be determined whether the nature of a solution or a mixture mentioned by name or containing a substance mentioned by name is such that the solution or mixture is not subject to the requirements for this Class (see also 2.1.3).

2.2.3.2. Substances not accepted for carriage

2.2.3.2.1. Substances of Class 3 which are liable to form peroxides easily (as happens with ethers or with certain heterocyclic oxygenated substances) shall not be accepted for carriage if their peroxide content, calculated as hydrogen peroxide (H_2O_2), exceeds 0,3 %. The peroxide content shall be determined as indicated in 2.3.3.2.

2.2.3.2.2. The chemically unstable substances of Class 3 shall not be accepted for carriage unless the necessary steps have been taken to prevent their dangerous decomposition or polymerization during carriage. To this end, it shall be ensured in particular that receptacles and tanks do not contain any substance liable to promote these reactions.

2.2.3.2.3. Liquid desensitized explosives other than those listed in table A of Chapter 3.2 shall not be accepted for carriage as substances of Class 3.

2.2.3.3. List of collective entries

Flammable liquids

Without subsidiary risk

F1

1133	ADHESIVES containing flammable liquid
1136	COAL TAR DISTILLATES, FLAMMABLE
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)
1169	EXTRACTS, AROMATIC, LIQUID
1197	EXTRACTS, FLAVOURING, LIQUID
1210	PRINTING INK, flammable or
1210	PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or
1263	PAINT RELATED MATERIAL (including paint thinning or reducing compound)
1266	PERFUMERY PRODUCTS with flammable solvents
1293	TINCTURES, MEDICINAL
1306	WOOD PRESERVATIVES, LIQUID
1866	RESIN SOLUTION, flammable
1999	TARS, LIQUID including road asphalt and oils, bitumen and cut backs
3065	ALCOHOLIC BEVERAGES
3269	POLYESTER RESIN KITS
1224	KETONES, LIQUID, N.O.S.
1268	PETROLEUM DISTILLATES, N.O.S. or
1268	PETROLEUM PRODUCTS, N.O.S.
1987	ALCOHOLS, N.O.S.
1989	ALDEHYDES, N.O.S.
2319	TERPENE HYDROCARBONS, N.O.S.
3271	ETHERS, N.O.S.
3272	ESTERS, N.O.S.
3295	HYDROCARBONS, LIQUID, N.O.S.
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or
3336	MERCAPTANS MIXTURE, LIQUID, FLAMMABLE, N.O.S.
1993	FLAMMABLE LIQUID, N.O.S.

elevated temperature — F2

3256	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., with flash point above 61 °C, at or above its flash-point

Toxic

FT

FT1

1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or
1228	MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or
2478	ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.

pesticide (flash-point <23°C) — FT2

2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2764	TRIAZINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2780	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE TOXIC
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S.

NOTE: The classification of a pesticide under an entry shall be effected on the basis of the active ingredient, of the physical state of the pesticide and any subsidiary risks it may exhibit.

(continued)

List of collective entries (control)

Corrosive	FC	2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or
		2733	POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.
		2985	CHLOROSILANES, FLAMMABLE, CORROSIVE, N.O.S.
		3274	ALCOHOLATES SOLUTION, N.O.S., in alcohol
		2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Toxic, corrosive	FTC	3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
Liquid desensitized explosive	D	3343	NITROGLYCERIN MIXTURE, DESENTIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30 % nitroglycerine by mass
		3357	NITROGLYCERIN MIXTURE, DESENTIZED, LIQUID, N.O.S. with not more than 30 % nitroglycerin by mass
			(No other collective entry available. In addition only those substances listed in Table A of Chapter 3.2 are to be accepted for carriage as substances of Class 3.)

2.2.41 *Class 4.1 Flammable solids, self-reactive substances and solid desensitized explosives*

2.2.41.1. Criteria

2.2.41.1.1. The heading of Class 4.1 covers flammable substances and articles, desensitized explosives which are solids according to subparagraph (a) of the definition 'solid' in 1.2.1 and selfreactive solids or liquids.

The following are assigned to Class 4.1:

— readily flammable solid substances and articles (see 2.2.41.1.3 to 2.2.41.1.8);

— self-reactive solids or liquids (see 2.2.41.1.9 to 2.2.41.1.16);

— solid desensitized explosives (see 2.2.41.1.18);

— substances related to self-reactive substances (see 2.2.41.1.19).

2.2.41.1.2. The substances and articles of Class 4.1 are subdivided as follows:

F Flammable solids, without subsidiary risk

F1 Organic

F2 Organic, molten

F3 Inorganic

FO Flammable solids, oxidizing

FT Flammable solids, toxic

FT1 Organic, toxic

FT2 Inorganic, toxic

FC Flammable solids, corrosive

FC1 Organic, corrosive

FC2 Inorganic, corrosive

D Solid desensitized explosives without subsidiary risk

DT Solid desensitized explosives, toxic

SR Self-reactive substances

SR1 Substances not requiring temperature control

SR2 Substances requiring temperature control (not accepted for carriage by rail)

Flammable solids

Definition and properties

2.2.41.1.3. Flammable solids are readily combustible solids and solids which may cause fire through friction.

Readily combustible solids are powdered, granular, or pasty substances which are dangerous if they can be easily ignited by brief contact with an ignition source, such as a burning match, and if the flame spreads rapidly. The danger may come not only from the fire but also from toxic combustion products. Metal powders are especially dangerous because of the difficulty of extinguishing a fire since normal extinguishing agents such as carbon dioxide or water can increase the hazard.

Classification

2.2.41.1.4. Substances and articles classified as flammable solids of Class 4.1 are listed in table A of Chapter 3.2. The assignment of organic substances and articles not mentioned by name in table A of Chapter 3.2 to the relevant entry of sub-section 2.2.41.3 in accordance with the requirements of Chapter 2.1 can be based on experience or on the results of the test procedures in accordance with Part III, sub-section 33.2.1 of the Manual of Tests and Criteria. The assignment of inorganic substances not mentioned by name shall be based on the results of the test procedures in accordance with Part III, sub-section 33.2.1 of the Manual of Tests and Criteria; experience shall also be taken into account when it leads to a more stringent assignment.

2.2.41.1.5. When substances not mentioned by name are assigned to one of the entries listed in 2.2.41.3 on the basis of the test procedures in accordance with the Manual of Tests and Criteria, Part III, sub-section 33.2.1, the following criteria apply:

(a) With the exception of metal powders or powders of metal alloys, powdery, granular or pasty substances shall be classified as readily flammable substances of Class 4.1 if they can be easily ignited by brief contact with an ignition source (e.g. a burning match), or if, in the event of ignition, the flame spreads rapidly, the burning time is less than 45 seconds for a measured distance of 100 mm or the rate of burning is greater than 2,2 mm/s.

(b) Metal powders or powders of metal alloys shall be assigned to Class 4.1 if they can be ignited by a flame and the reaction spreads over the whole length of the sample in 10 minutes or less.

Solids which may cause fire through friction shall be classified in Class 4.1 by analogy with existing entries (e.g. matches) or in accordance with any appropriate special requirement.

2.2.41.1.6. On the basis of the test procedure in accordance with the Manual of Tests and Criteria, Part III, Section 33.2.1 and the criteria set out in 2.2.41.1.4 and 2.2.41.1.5, it may also be determined whether the nature of a substance mentioned by name is such that the substance is not subject to the requirements for this Class.

2.2.41.1.7. If substances of Class 4.1, as a result of admixtures, come into different categories of risk from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures shall be assigned to the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes) see also 2.1.3.

Assignment of packing groups

2.2.41.1.8. Flammable solids classified under the various entries in table A of Chapter 3.2 shall be assigned to packing groups II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, sub-section 33.2.1, in accordance with the following criteria:

(a) Readily flammable solids which, when tested, have a burning time of less than 45 seconds over a measured distance of 100 mm shall be assigned to:

Packing group II: if the flame passes the wetted zone;

Packing group III: if the wetted zone stops the flame for at least four minutes;

(b) Metal powders or powders of metal alloys shall be assigned to:

Packing group II: if, when tested, the reaction spreads over the whole length of the sample in five minutes or less;

Packing group III: if, when tested, the reaction spreads over the whole length of the sample in more than five minutes.

For solids which may cause fire through friction, the packing group shall be assigned by analogy with existing entries or in accordance with any special requirement.

Self-reactive substances

Definitions

2.2.41.1.9. For the purposes of this Directive, self-reactive substances are thermally unstable substances liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). Substances are not considered to be self-reactive substances of Class 4.1, if:

(a) they are explosives according to the criteria of Class 1;

(b) they are oxidizing substances according to the assignment procedure of Class 5.1 (see 2.2.51.1);

(c) they are organic peroxides according to the criteria of Class 5.2 (see 2.2.52.1);

(d) their heat of decomposition is less than 300 J/g; or

(e) their self-accelerating decomposition temperature (SADT) (see Note 2 below) is greater than 75 °C for a 50 kg package.

NOTES:

1. The heat of decomposition can be determined using any internationally recognised method e.g. differential scanning calorimetry and adiabatic calorimetry.

2. The self-accelerating decomposition temperature (SADT) is the lowest temperature at which self-accelerating decomposition may occur with a substance in the packaging as used during carriage. Requirements for the determination of the SADT are given in the Manual of Tests and Criteria, Part II, Chapter 20 and section 28.4.

3. Any substance which shows the properties of a self-reactive substance shall be classified as such, even if this substance gives a positive test result according to 2.2.42.1.5 for classification in Class 4.2.

Properties

2.2.41.1.10. The decomposition of self-reactive substances can be initiated by heat, contact with catalytic impurities (e.g. acids, heavy-metal compounds, bases), friction or impact. The rate of decomposition increases with temperature and varies with the substance. Decomposition, particularly if no ignition occurs, may result in the evolution of toxic gases or vapours. For certain self-reactive substances, the temperature shall be controlled. Some self-reactive substances may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Certain self-reactive substances burn vigorously. Self-reactive substances are, for example, some compounds of the types listed below:

— aliphatic azo compounds (-C-N=N-C-);

— organic azides ($-C-N_3$);

— diazonium salts ($-CN_2^+Z^-$);

— N-nitroso compounds (-N-N=O);

— aromatic sulphohydrazides ($-SO_2-NH-NH_2$).

This list is not exhaustive and substances with other reactive groups and some mixtures of substances may have similar properties.

Classification

2.2.41.1.11. Self-reactive substances are classified into seven types according to the degree of danger they present. The types of self-reactive substances range from type A, which is not accepted for carriage in the packaging in which it is tested, to type G, which is not subject to the requirements for self-reactive substances of Class 4.1. The classification of types B to F is directly related to the maximum quantity allowed in one packaging. The principles to be applied for classification as well as the applicable classification procedures, test methods and criteria and an example of a suitable test report are given in Part II of the Manual of Tests and Criteria.

2.2.41.1.12. Substances which have already been classified and assigned to the appropriate collective entry are listed in 2.2.41.4 together with the applicable UN number and packing method.

The collective entries specify:

— self-reactive substances types B to F, see 2.2.41.1.11 above;

— physical state (liquid/solid).

The classification of the self-reactive substances listed in 2.2.41.4 is based on the technically pure substance (except where a concentration of less than 100 % is specified).

2.2.41.1.13. Classification of self-reactive substances or formulations of self-reactive substances not listed in 2.2.41.4 and assignment to a collective entry shall be made by the competent authority of the country of origin on the basis of a test report. The statement of approval shall contain the classification and the relevant transport conditions. If the country of origin is not a COTIF Member State, the classification and the conditions of carriage shall be recognized by the competent authority of the first COTIF Member State reached by the consignment.

2.2.41.1.14. Activators, such as zinc compounds, may be added to some self-reactive substances to change their reactivity. Depending on both the type and the concentration of the activator, this may result in a decrease in thermal stability and a change in explosive properties. If either of these properties is altered, the new formulation shall be assessed in accordance with the classification procedure.

2.2.41.1.15. Samples of self-reactive substances or formulations of self-reactive substances not listed in 2.2.41.4, for which a complete set of test results is not available and which are to be carried for further testing or evaluation, shall be assigned to one of the appropriate entries for self-reactive substances type C provided the following conditions are met:

— the available data indicates that the sample would be no more dangerous than self-reactive substances type B;

— the sample is packaged in accordance with packing method OP2 and the quantity per wagon is limited to 10 kg;

Samples requiring temperature control shall not be accepted for carriage by rail.

Desensitization

2.2.41.1.16. In order to ensure safety during carriage, self-reactive substances are in many cases desensitized by use of a diluent. Where a percentage of a substance is stipulated, this refers to the percentage by mass, rounded to the nearest whole number. If a diluent is used, the self-reactive substance shall be tested with the diluent present in the concentration and form used in carriage. Diluents which may allow a self-reactive substance to concentrate to a dangerous extent in the event of leakage from a packaging shall not be used. Any diluent shall be compatible with the self-reactive substance. In this regard, compatible diluents are those solids or liquids which have no detrimental influence on the thermal stability and hazard type of the self-reactive substance.

2.2.41.1.17. (reserved)

Solid desensitized explosives

2.2.41.1.18. Solid desensitized explosives are substances which are wetted with water or alcohols or are diluted with other substances to suppress their explosive properties. Such entries in table A of Chapter 3.2 are: UN Nos 1310, 1320, 1321, 1322, 1336, 1337, 1344, 1347, 1348, 1349, 1354, 1355, 1356, 1357, 1517, 1571, 2555, 2556, 2557, 2852, 2907, 3317, 3319 and 3344; and, if special requirement 15 of Chapter 3.3 is complied with: UN Nos 0154, 0155, 0209, 0214, 0215 and 0234; and, if special requirement 18 of Chapter 3.3. is complied with: UN No 0220.

Substances related to self-reactive substances

2.2.41.1.19. Substances which

(a) were provisionally classified under Class 1 in accordance with test series 1 and 2, but which are exempted from Class 1 on the basis of test series 6;

(b) are not self-reactive substances of Class 4.1;

(c) are not substances of classes 5.1 or 5.2

are also classified under Class 4.1. Such entries are UN Nos 2956, 3241, 3242 and 3251.

2.2.41.2. **Substances not accepted for carriage**

2.2.41.2.1. The chemically unstable substances of Class 4.1 shall not be accepted for carriage unless the necessary steps have been taken to prevent their dangerous decomposition or polymerization during carriage. To this end, it shall in particular be ensured that receptacles and tanks do not contain any substance liable to promote these reactions.

2.2.41.2.2. Flammable solids, oxidizing, assigned to UN No 3097 shall not be accepted for carriage unless they meet the requirements for Class 1 (see also 2.1.3.7).

2.2.41.2.3. The following substances shall not be accepted for carriage:

— Self-reactive substances of type A (see Manual of Tests and Criteria, Part II, paragraph 20.4.2 (a));

— Phosphorus sulphides which are not free from yellow and white phosphorus;

— Solid desensitized explosives other than those listed in table A of Chapter 3.2;

— Inorganic flammable substances in the molten form other than UN No 2448 SULPHUR, MOLTEN;

— Barium azide with a water content less than 50 % (mass).

The following self-reactive substances requiring temperature control shall not be accepted for carriage by rail:

— Self-reactive substances with an SADT ≤ 55 °C:

UN 3231 SELF-REACTIVE LIQUID TYPE B, TEMPERATURE CONTROLLED

UN 3232 SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED

UN 3233 SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED

UN 3234 SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED

UN 3235 SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED

UN 3236 SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED

UN 3237 SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED

UN 3238 SELF-REACTIVE SOLID TYPE E, TEMPERATURE CONTROLLED

UN 3239 SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED

UN 3240 SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED

2.2.41.3. List of collective entries

Substances					
Flammable solids F	without subsidiary risk	organic	F1	3175	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.
				1353	FIBRES IMPREGNATED WITH WEAKLY NITRATED NITROCELLULOSE, N.O.S. or
				1353	FABRICS IMPREGNATED WITH WEAKLY NITRATED NITROCELLULOSE, N.O.S.
				1325	FLAMMABLE SOLID, ORGANIC, N.O.S.
		organic molten	F2	3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.
		inorganic	F3	3089	METAL POWDER, FLAMMABLE, N.O.S. ([a]), ([b])
				3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N.O.S.
				3182	METAL HYDRIDES, FLAMMABLE, N.O.S. ([c])
				3178	FLAMMABLE SOLID, INORGANIC, N.O.S.
	oxidizing		FO	3097	FLAMMABLE SOLID, OXIDIZING, N.O.S. (not allowed, see 2.2.41.2.2)
	toxic FT	organic	FT1	2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.
		inorganic	FT2	3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.
	corrosive FC	organiques	FC1	2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
		inorganic	FC2	3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S.
Solid desensitized	without subsidiary risk		D	3319	NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2% but not more than 10% nitroglycerin, by mass
				3344	PENTAERYTHRITE TETRANITRATE MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10% but not more than 20% PETN, by mass
					(no other collective entry available. In addition, only substances listed in Table A of Chapter 3.2 are to be accepted for carriage as substances of Class 4.1)
	toxic		DT		Only those listed in Table A of Chapter 3.2 are to be accepted for carriage as substances of Class 4.1
Self-reactive substances SR	not requiring temperature control		SR1		SELF-REACTIVE SUBSTANCE TYPE A, LIQUID (not to be accepted for carriage, see 2.2.41.2.3)
					SELF-REACTIVE SUBSTANCE TYPE A, SOLID (not to be accepted for carriage, see 2.2.41.2.3)
				3221	SELF-REACTIVE LIQUID TYPE B
				3222	SELF-REACTIVE SOLID TYPE B
				3223	SELF-REACTIVE LIQUID TYPE C
				3224	SELF-REACTIVE SOLID TYPE C
				3225	SELF-REACTIVE LIQUID TYPE D
				3226	SELF-REACTIVE SOLID TYPE D
				3227	SELF-REACTIVE LIQUID TYPE E
				3228	SELF-REACTIVE SOLID TYPE E
				3229	SELF-REACTIVE LIQUID TYPE F
				3230	SELF-REACTIVE SOLID TYPE F
					SELF-REACTIVE LIQUID TYPE G (not subject to the requirements of Class 4.1, see 2.2.41.1.11)
					SELF-REACTIVE SOLID TYPE G (not subject to the requirements of Class 4.1, see 2.2.41.1.11)
	requiring temperature control		SR2	3231	SELF-REACTIVE LIQUID TYPE B, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3232	SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3233	SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3234	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3235	SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3236	SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3237	SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3238	SELF-REACTIVE SOLID TYPE E, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3239	SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)
				3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED (not to be accepted for carriage by rail, see 2.2.41.2.3)

([a]) Metals and metal alloys in powdered or other flammable form, liable to spontaneous combustion, are substances of Class 4.2.

([b]) Metals and metal alloys in powdered or other flammable form which, in contact with water, emit flammable gases, are substances of Class 4.3.

([c]) Metals hydrides which, in contact with water, emit flammable gases, are substances of Class 4.3. Aluminium borohydride or aluminium borohydride in devices are substances of Class 4.2, UN No. 2870.

2.2.41.4. List of self-reactive substances

NOTE: For the packing methods, see 4.1.4.1, packing instruction PS20, and 4.1.7.1.

Self reactive substance	Concentration (%)	Packing method	UN generic entry	Remarks
AZODICARBONAMIDE FORMULATION TYPE B, TEMPERATURE CONTROLLED	< 100		3232	PROHIBITED
AZODICARBONAMIDE FORMULATION TYPE C	< 100	OP6	3224	(3)
AZODICARBONAMIDE FORMULATION TYPE C, TEMPERATURE CONTROLLED	< 100		3234	PROHIBITED
AZODICARBONAMIDE FORMULATION TYPE D	< 100	OP7	3226	(5)
AZODICARBONAMIDE TYPE D, TEMPERATURE CONTROLLED	< 100		3236	PROHIBITED
2,2′-AZODI(2,4-DIMETHYL-4-METHOXYVALERONITRILE)	100		3236	PROHIBITED
2,2′-AZODI(2,4-DIMETHYLVALERONITRILE)	100		3236	PROHIBITED
2,2′-AZODI-(ETHYL-2-METHYLPROPIONATE)	100		3235	PROHIBITED
1,1-AZODI(HEXAHYDROBENZONITRILE)	100	OP7	3226	
2,2′-AZODI(ISOBUTYRONITRILE)	100		3234	PROHIBITED
2,2′-AZODI(ISOBUTYRONITRILE) as a water based paste	≤ 50	OP6	3224	
2,2′-AZODI(2-METHYLBUTYRONITRILE)	100		3236	PROHIBITED
BENZENE-1,3-DISULPHOHYDRAZIDE, as a paste	52	OP7	3226	
BENZENE SULPHOHYDRAZIDE	100	OP7	3226	
4-(BENZYL(ETHYL)AMINO)-3-ETHOXYBENZENEDIAZONIUM ZINC CHLORIDE	100	OP7	3226	
4-(BENZYL(METHYL)AMINO)-3-ETHOXYBENZENEDIAZONIUM ZINC CHLORIDE	100		3236	PROHIBITED
3-CHLORO-4-DIETHYLAMINOBENZENE-DIAZONIUM ZINC CHLORIDE	100	OP7	3226	
2-DIAZO-1-NAPHTHOL-4-SULPHOCHLORIDE	100	OP5	3222	(2)
2-DIAZO-1-NAPHTHOL-5-SULPHOCHLORIDE	100	OP5	3222	(2)
2,5-DIETHOXY-4-MORPHOLINOBENZENE DIAZONIUM ZINC CHLORIDE	67-100		3236	PROHIBITED
2,5′-DIETHOXY-4-MORPHOLINOBENZENE DIAZONIUM ZINC CHLORIDE	66		3236	PROHIBITED
2,5′-DIETHOXY-4-MORPHOLINOBENZENE DIAZONIUM TETRAFLUOROBORATE	100		3236	PROHIBITED
2,5′-DIETHOXY-4-(PHENYLSULPHONYL)-BENZENE DIAZONIUM ZINC CHLORIDE	67		3236	PROHIBITED
DIETHYLENE GLYCOL-BIS-(ALLYLCARBONATE) + DIISOPROPYL PEROXYDICARBONATE	≥ 88 + ≤ 12		3237	PROHIBITED
2,5-DIMETHOXY-4-(4-METHYLPHENYLSULPHONYL)-BENZENE DIAZONIUM ZINC CHLORIDE	79		3236	PROHIBITED
4-DIMETHYLAMINO-6-(2-DIMETHYLAMINOETHOXY) TOLUENE-2-DIAZONIUM ZINC CHLORIDE	100		3236	PROHIBITED

Self reactive substance	Concentration (%)	Packing method	UN generic entry	Remarks
N,N′-DINITROSO-N,N′- DIMETHYL TEREPHTHALAMIDE, as a paste	72	OP6	3224	
N,N′-DINITROSOPENTAMETHYLENE-TETRAMINE	82	OP6	3224	([7])
DIPHENYLOXIDE-4,4′-DI-SULPHOHYDRAZIDE	100	OP7	3226	
4-DIPROPYLAMINOBENZENE-DIAZONIUM ZINC CHLORIDE	100	OP7	3226	
2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXY-LAMINO)-BENZENE DIAZONIUM ZINC CHLORIDE	63-92		3236	PROHIBITED
2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXY-LAMINO)-BENZENE DIAZONIUM ZINC CHLORIDE	62		3236	PROHIBITED
N-FORMYL-2-(NITROMETHYLENE)-1,3-PERHY-DROTHIAZINE	100		3236	PROHIBITED
2-(2-HYDROXYETHOXY)-1-(PYRROLIDINE-1-YL)-BENZENE-4-DIAZONIUM ZINC CHLORIDE	100		3236	PROHIBITED
3-(2-HYDROXYETHOXY)-4-(PYRROLIDINE-1-YL)-BENZENE DIAZONIUM ZINC CHLORIDE	100		3236	PROHIBITED
2-(N,N-METHYLAMINOETHYLCARBONYL)-4-(3,4-DIMETHYLPHENYLSULPHONYL)-BENZENE DIAZONIUM HYDROGEN SULPHATE	96		3236	PROHIBITED
4-METHYLBENZENESULPHONYL-HYDRAZIDE	100	OP7	3236	
3-METHYL-4-(PYRROLIDINE-1-YL)-BENZENE DIA-ZONIUM TETRAFLUOROBORATE	95		3234	PROHIBITED
SODIUM-2-DIAZO-1-NAPHTHOL-4-SULPHON-ATE	100	OP7	3226	
SODIUM-2-DIAZO-1-NAPHTHOL-5-SULPHON-ATE	100	OP7	3226	
4-NITROSOPHENOL	100		3236	PROHIBITED
SELF-REACTIVE LIQUID, SAMPLE		OP2	3223	([8])
SELF-REACTIVE LIQUID, SAMPLE, TEMPERATURE CONTROLLED			3233	PROHIBITED
SELF-REACTIVE SOLID, SAMPLE		OP2	3224	([8])
SELF-REACTIVE SOLID, SAMPLE, TEMPERATURE CONTROLLED			3234	PROHIBITED
TETRAMINOPALLADIUM-(II)-NITRATE	100		3234	PROHIBITED

([1]) (reserved)
([2]) 'EXPLOSIVE' subsidiary risk label required (Model No. 1, see 5.2.2.2.2).
([3]) Azodicarbonamide formulations which fulfil the criteria of paragraph 20.4.2(c) of the Manual of Tests and Criteria, Part II.
([4]) (reserved)
([5]) Azodicarbonamide formulations which fulfil the criteria of paragraph 20.4.2(d) of the Manual of Tests and Criteria, Part II.
([6]) (reserved)
([7]) With a compatible diluent having a boiling point of not less than 150 °C.
([8]) See 2.2.41.1.15.

2.2.42 *Class 4.2 Substances liable to spontaneous combustion*

2.2.42.1. Criteria

2.2.42.1.1. The heading of Class 4.2 covers:

— *Pyrophoric substances* which are substances, including mixtures and solutions (liquid or solid), which even in small quantities ignite on contact with air within five minutes. These are the Class 4.2 substances the most liable to spontaneous combustion; and

— *Self-heating substances and articles* which are substances and articles, including mixtures and solutions, which, on contact with air, without energy supply, are liable to self-heating. These substances will ignite only in large amounts (kilogrammes) and after long periods of time (hours or days).

2.2.42.1.2. The substances and articles of Class 4.2 are subdivided as follows:

S Substances liable to spontaneous combustion, without subsidiary risk

S1 Organic, liquid

S2 Organic, solid

S3 Inorganic, liquid

S4 Inorganic, solid

SW Substances liable to spontaneous combustion, which, in contact with water, emit flammable gases

SO Substances liable to spontaneous combustion, oxidizing

ST Substances liable to spontaneous combustion, toxic

ST1 Organic, toxic, liquid

ST2 Organic, toxic, solid

ST3 Inorganic, toxic, liquid

ST4 Inorganic, toxic, solid

SC Substances liable to spontaneous combustion, corrosive

SC1 Organic, corrosive, liquid

SC2 Organic, corrosive, solid

SC3 Inorganic, corrosive, liquid

SC4 Inorganic, corrosive, solid

Properties

2.2.42.1.3. Self-heating of these substances, leading to spontaneous combustion, is caused by reaction of the substance with oxygen (in the air) and the heat developed not being conducted away rapidly enough to the surroundings. Spontaneous combustion occurs when the rate of heat production exceeds the rate of heat loss and the auto-ignition temperature is reached.

Classification

2.2.42.1.4. Substances and articles classified in Class 4.2 are listed in table A of Chapter 3.2. The assignment of substances and articles not mentioned by name in table A of Chapter 3.2 to the relevant specific N.O.S. entry of 2.2.42.3 in accordance with the requirements of Chapter 2.1 can be based on experience or the results of the test procedures in accordance with the Manual of Tests and Criteria, Part III, Section 33.3. Assignment to general N.O.S. entries of Class 4.2 shall be based on the results of the test procedures inaccordance with the Manual of Tests and Criteria, Part III, section 33.3; experience shall also be taken into account when it leads to a more stringent assignment.

2.2.42.1.5. When substances or articles not mentioned by name are assigned to one of the entries listed in 2.2.42.3 on the basis of the test procedures in accordance with the Manual of Tests and Criteria, Part III, section 33.3, the following criteria shall apply:

(a) Solids liable to spontaneous combustion (pyrophoric) shall be assigned to Class 4.2 when they ignite on falling from a height of 1 m or within five minutes;

(b) Liquids liable to spontaneous combustion (pyrophoric) shall be assigned to Class 4.2 when:

(i) on being poured on an inert carrier, they ignite within five minutes, or

(ii) in the event of a negative result of the test according to (i), when poured on a dry, indented filter paper (Whatman No. 3 filter), they ignite or carbonize it within five minutes;

(c) Substances in which, in a 10 cm sample cube, at 140 °C test temperature, spontaneous combustion or a rise in temperature to over 200 °C is observed within 24 hours shall be assigned to Class 4.2. This criterion is based on the temperature of the spontaneous combustion of charcoal, which is at 50 °C for a sample cube of 27 m^3. Substances with a temperature of spontaneous combustion higher than 50 °C for a volume of 27 m^3 are not to be assigned to Class 4.2.

NOTES: 1. Substances carried in packages with a volume of not more than 3 m^3 are exempted from Class 4.2 if, tested with a 10 cm sample cube at 120 °C, no spontaneous combustion nor a rise in temperature to over 180 °C is observed within 24 hours.

2. Substances carried in packages with a volume of not more than 450 litres are exempted from Class 4.2 if, tested with a 10 cm sample cube at 100 °C, no spontaneous combustion nor a rise in temperature to over 160 °C is observed within 24 hours.

2.2.42.1.6. If substances of Class 4.2, as a result of admixtures, come into different categories of risk from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures shall be assigned to the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes), see also 2.1.3.

2.2.42.1.7. On the basis of the test procedure in the Manual of Tests and Criteria, Part III, section 33.3 and the criteria set out in 2.2.42.1.5, it may also be determined whether the nature of a substance mentioned by name is such that the substance is not subject to the requirements for this Class.

Assignment of packing groups

2.2.42.1.8. Substances and articles classified under the various entries in table A of Chapter 3.2 shall be assigned to packing groups I, II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, section 33.3, in accordance with the following criteria:

(a) Substances liable to spontaneous combustion (pyrophoric) shall be assigned to packing group I;

(b) Self-heating substances and articles in which, in a 2,5 cm sample cube, at 140 °C test temperature, spontaneous combustion or a rise in temperature to over 200 °C is observed within 24 hours, shall be assigned to packing group II;

Substances with a temperature of spontaneous combustion higher than 50 °C for a volume of 450 litres are not to be assigned to packing group II;

(c) Slightly self-heating substances in which, in a 2,5 cm sample cube, the phenomena referred to under (b) are not observed, in the given conditions, but in which in a 10 cm sample cube at 140 °C test temperature spontaneous combustion or a rise in temperature to over 200 °C is observed within 24 hours, shall be assigned to packing group III.

2.2.42.2. Substances not accepted for carriage

The following substances shall not be accepted for carriage:

— UN No 3255 tert-BUTYL HYPOCHLORITE; and

— Self-heating solids, oxidizing, assigned to UN No 3127 unless they meet the requirements for Class 1 (see 2.1.3.7).

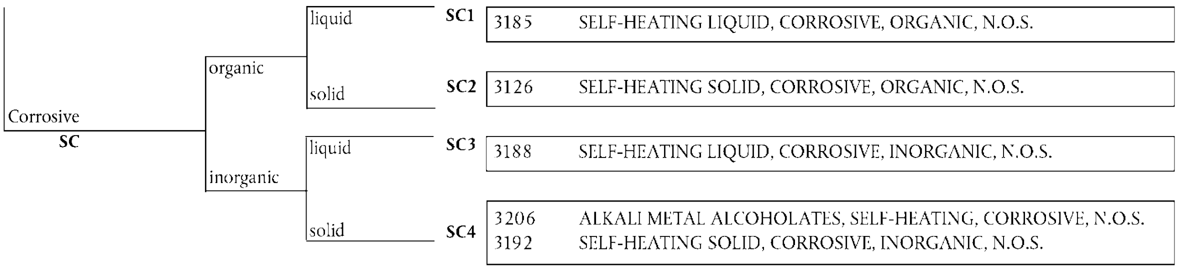
2.2.42.3. List of collective entries

Substances liable to spontaneous combustion

Without subsidiary risk S	organic	liquid	S1	2845	PYROPHORIC LIQUID, ORGANIC, N.O.S.
				3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.
		solid	S2	1373	FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil
				2006	PLASTICS, NITROCELLULOSE-BASED, SELF-HEATING, N.O.S.
				3313	ORGANIC PIGMENTS, SELF HEATING
				2846	PYROPHORIC SOLID, ORGANIC, N.O.S.
				3088	SELF-HEATING SOLID, ORGANIC, N.O.S.
	inorganic	liquid	S3	3194	PYROPHORIC LIQUID, INORGANIC, N.O.S.
				3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.
		solid	S4	1383	PYROPHORIC METAL, N.O.S. or
				1383	PYROPHORIC ALLOY, N.O.S.
				1378	METAL CATALYST, WETTED with a visible excess of liquid
				2881	METAL CATALYST, DRY
				3189 (a)	METAL POWDER, SELF-HEATING, N.O.S.
				3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.
				3200	PYROPHORIC SOLID, INORGANIC, N.O.S.
				3190	SELFHEATING SOLID, INORGANIC, N.O.S.
Water-reactive			SW	2445	LITHIUM ALKYLS
				3051	ALUMINIUM ALKYLS
				3052	ALUMINIUM ALKYL HALIDES, LIQUID or
				3052	ALUMINIUM ALKYL HALIDES, SOLID
				3053	MAGNESIUM ALKYLS
				3076	ALUMINIUM ALKYL HYDRIDES
				2003	METAL ALKYLS, N.O.S. or
				2003	METAL ARYLS, N.O.S.
				3049	METAL ALKYL HALIDES, N.O.S. or
				3049	METAL ARYL HALIDES, N.O.S.
				3050 (b)(c)	METAL ALKYL HYDRIDES, N.O.S. or
				3050 (b)(c)	METAL ARYL HYDRIDES, N.O.S.
				3203 (d)	PYROPHORIC ORGANOMETALLIC COMPOUND, WATER-REACTIVE, N.O.S., liquid or
				3203 (d)	PYROPHORIC ORGANOMETALLIC COMPOUND, WATER-REACTIVE, N.O.S., solid
Oxidizing			SO	3127	SELF-HEATING SOLID, OXIDIZING, N.O.S. (not to be accepted for carriage, see 2.2.42.2)
Toxic ST	organic	liquid	ST1	3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.
		solid	ST2	3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.
	inorganic	liquid	ST3	3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.
		solid	ST4	3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S.

(CONTINUED)

List of collective entries (control)



([a]) Dust and powder of metals, non toxic in a non-spontaneous combustible form which nevertheless, in contact with water, emit flammable gases, are substances of Class 4.3.
([b]) Metal hydrides other than UN No 2870 in flammable form are substances of Class 4.1.
([c]) Metal hydrides which, in contact with water, emit flammable gases, are substances of Class 4.3.
([d]) Flammable solutions with organometallic compounds which are not liable to spontaneous combustion and, in contact with water, do not emit fammable gases, are substances of Class 3. Organometallic compounds and their solutions which are liable to spontaneous combustion but, in contact with water, emit flammable gases, are substances of Class 4.3.

2.2.43 Class 4.3 Substances which, in contact with water, emit flammable gases

2.2.43.1. Criteria

2.2.43.1.1. The heading of Class 4.3 covers substances which react with water to emit flammable gases liable to form explosive mixtures with air, and articles containing such substances.

2.2.43.1.2. Substances and articles of Class 4.3 are subdivided as follows:

W Substances which, in contact with water, emit flammable gases, without subsidiary risk, and articles containing such substances

- W1 Liquid
- W2 Solid
- W3 Articles

WF1 Substances which, in contact with water, emit flammable gases, flammable, liquid

WF2 Substances which, in contact with water, emit flammable gases, flammable, solid

WS Substances which, in contact with water, emit flammable gases, liable to spontaneous combustion, solid

WO Substances which, in contact with water, emit flammable gases, oxidizing, solid

WT Substances which, in contact with water, emit flammable gases, toxic

- WT1 Liquid
- WT2 Solid

WC Substances which, in contact with water, emit flammable gases, corrosive

- WC1 Liquid
- WC2 Solid

WFC Substances which, in contact with water, emit flammable gases, flammable, corrosive

Properties

2.2.43.1.3. Certain substances in contact with water may emit flammable gases that can form explosive mixtures with air. Such mixtures are easily ignited by all ordinary sources of ignition, for example naked lights, sparking hand tools or unprotected light bulbs. The resulting blast wave and flames may endanger people and the environment. The test method referred to in 2.2.43.1.4 below is used to determine whether the reaction of a substance with water leads to the development of a dangerous amount of gases which maybe flammable. This test method shall not be applied to pyrophoric substances.

Classification

2.2.43.1.4. Substances and articles classified in Class 4.3 are listed in table A of Chapter 3.2. The assignment of substances and articles not mentioned by name in table A of Chapter 3.2 to the relevant entry of 2.2.43.3 in accordance with the requirements of Chapter 2.1 shall be based on the results of the test procedure in accordance with the Manual of Tests and Criteria, Part III, Section 33.4; experience shall also be taken into account when it leads to a more stringent assignment.

2.2.43.1.5. When substances not mentioned by name are assigned to one of the entries listed in 2.2.43.3 on the basis of the test procedure in accordance with the Manual of Tests and Criteria, Part III, Section 33.4, the following criteria shall apply:

A substance shall be assigned to Class 4.3 if:

(a) spontaneous ignition of the gas emitted takes place in any step of the test procedure; or

(b) there is an evolution of flammable gas at a rate greater than 1 litre per kilogramme of the substance to be tested per hour.

2.2.43.1.6. If substances of Class 4.3, as a result of admixtures, come into different categories of risk from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures shall be assigned to the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes) see also 2.1.3.

2.2.43.1.7. On the basis of the test procedures in accordance with the Manual of Tests and Criteria, Part III, Section 33.4, and the criteria set out in paragraph 2.2.43.1.5, it may also be determined whether the nature of a substance mentioned by name is such that the substance is not subject to the requirements for this Class.

Assignment of packing groups

2.2.43.1.8. Substances and articles classified under the various entries in table A of Chapter 3.2 shall be assigned to packing groups I, II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, section 33.4, in accordance with the following criteria:

(a) Packing group I shall be assigned to any substance which reacts vigorously with water at ambient temperature and generally demonstrates a tendency for the gas produced to ignite spontaneously, or one which reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is equal to or greater than 10 litres per kilogramme of substance within one minute;

(b) Packing group II shall be assigned to any substance which reacts readily with water at ambient temperature such that the maximum rate of evolution of flammable gas is equal to or greater than 20 litres per kilogramme of substance per hour, and which does not meet the criteria of packing group I;

(c) Packing group III shall be assigned to any substance which reacts slowly with water at ambient temperature such that the maximum rate of evolution of flammable gas is greater than 1 litre per kilogramme of substance per hour, and which does not meet the criteria of packing groups I or II.

2.2.43.2. Substances not accepted for carriage

Water-reactive solids, flammable, assigned to UN No 3132, water-reactive solids, oxidizing, assigned to UN No 3133 and water-reactive solids, self-heating, assigned to UN No. 3135 shall not be accepted for carriage unless they meet the requirements for Class 1 (see also 2.1.3.7).

2.2.43.3. List of collective entries

Substances which, in contact with water, emit flammable gases		Classification code	UN No.	Name
Without subsidiary risk W	liquid	W1	1391	ALKALI METAL DISPERSION or
			1391	ALKALINE EARTH METAL DISPERSION
			1421	ALKALI METAL ALLOY, LIQUID, N.O.S.
			3148	WATER-REACTIVE LIQUID, N.O.S.
	solid	W2 (a)	1389	ALKALI METAL AMALGAM
			1390	ALKALI METAL AMIDES
			1392	ALKALINE EARTH METAL AMALGAM
			1393	ALKALINE EARTH METAL ALLOY, N.O.S.
			1409	METAL HYDRIDES, WATER-REACTIVE, N.O.S.
			3170	ALUMINIUM SMELTING BY-PRODUCTS or
			3170	ALUMINIUM REMELTING BY-PRODUCTS
			3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
			2813	WATER-REACTIVE SOLID, N.O.S.
	articles	W3	3292	BATTERIES, CONTAINING SODIUM or
			3292	CELLS, CONTAINING SODIUM
Liquid, flammable		WF1 (b)	3207	ORGANOMETALLIC COMPOUND, WATER-REACTIVE, FLAMMABLE, N.O.S., or
			3207	ORGANOMETALLIC COMPOUND SOLUTION, WATER-REACTIVE, FLAMMABLE, N.O.S. or
			3207	ORGANOMETALLIC COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.
Solid, flammable		WF2	3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S. (not to be accepted for carriage, see 2.2.43.2)
Solid, self-heating		WS (c)	3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.
			3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S. (not to be accepted for carriage, see 2.2.43.2)
Solid, oxidizing		WO	3133	WATER-REACTIVE SOLID, OXIDISING, N.O.S. (not to be accepted for carriage, see 2.2.43.2)
Toxic WT	liquid	WT1	3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.
	solid	WT2	3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.
Corrosive WC	liquid	WC1	3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.
	solid	WC1	3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.
Flammable, corrosive		WFC (d)	2988	CHLOROSILANES, WATER-REACTIVE, FLAMMABLE, CORROSIVE, N.O.S. (no other collective entry with this classification code available; classification, where necessary, under a collective entry with a classification code to be determined according to the precedence of hazard table in 2.1.3.9)

(a) Metals and metal alloys which, in contact with water, do not emit flammable gases and are not pyrophoric or self-heating, but which are readily flammable, are substances of Class 4.1. Alkaline-earth metals and alkaline-earth metal alloys in pyrophoric form are substances of Class 4.2. Dust and powders of metals in pyrophoric form are substances of Class 4.2. Metals and metal alloys in pyrophoric form are substances of Class 4.2. Compounds of phosphorus with heavy metals such as iron, copper, etc. are not subject to the requirements of this Directive.

(b) Flammable solutions with organometallic compounds in concentrations which, in contact with water, neither emit flammable gases in dangerous quantities, or ignite spontaneously, are substances of Class 3. Organometallic compounds and their solutions, which ignite spontaneously, are substances of Class 4.2.

(c) Metals and metal alloys in pyrophoric form are substances of Class 4.2.

(d) Chlorosilanes, having a flash-point of less than 23 °C and which, in contact with water, do not emit flammable gases, are substances of Class 3. Chlorosilanes, having a flash-point equal to or greater than 23 °C and which, in contact with water, do not emit flammable gases, are substances of Class 8.

2.2.51. *Class 5.1 Oxidizing substances*

2.2.51.1. Criteria

2.2.51.1.1. The heading of Class 5.1 covers substances which, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause or contribute to the combustion of other material, and articles containing such substances.

2.2.51.1.2. The substances of Class 5.1 and articles containing such substances are subdivided as follows:

O Oxidizing substances without subsidiary risk or articles containing such substances

O1 Liquid

O2 Solid

O3 Articles

OF Oxidizing substances, solid, flammable

OS Oxidizing substances, solid, liable to spontaneous combustion

OW Oxidizing substances, solid which, in contact with water, emit flammable gases

OT Oxidizing substances, toxic

OT1 Liquid

OT2 Solid

OC Oxidizing substances, corrosive

OC1 Liquid

OC2 Solid

OTC Oxidizing substances, toxic, corrosive

2.2.51.1.3. Substances and articles classified in Class 5.1 are listed in table A of Chapter 3.2. The assignment of substances and articles not mentioned by name in table A of Chapter 3.2 to the relevant entry of 2.2.51.3 in accordance with the requirements of Chapter 2.1 can be based on the tests, methods and criteria in 2.2.51.1.6 – 2.2.51.1.9 below and the Manual of Tests and Criteria, Part III, Section 34.4. In the event of divergence between test results and known experience, judgement based on known experience shall take precedence over test results.

2.2.51.1.4. If substances of Class 5.1, as a result of admixtures, come into different categories of risk from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures or solutions shall be assigned to the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes) see also 2.1.3.

2.2.51.1.5. On the basis of the test procedures in the Manual of Tests and Criteria, Part III, section 34.4. and the criteria set out in 2.2.51.1.6 – 2.2.51.1.9 it may also be determined whether the nature of a substance mentioned by name in table A of Chapter 3.2 is such that the substance is not subject to the requirements for this Class.

Oxidizing solids

Classification

2.2.51.1.6. When oxidizing solid substances not mentioned by name in table A of Chapter 3.2 are assigned to the relevant entry in 2.2.51.3 on the basis of the test procedure in accordance with the Manual of Tests and Criteria, Part III, sub-section 34.4.1, the following criteria shall apply:

A solid substance shall be assigned to Class 5.1 if, in the 4:1 or the 1:1 sample-to-cellulose ratio (by mass) tested, it ignites or burns or exhibits mean burning times equal to or less than that of a 3:7 mixture (by mass) of potassium bromate and cellulose.

Assignment of packing groups

2.2.51.1.7. Oxidizing solids classified under the various entries in table A of Chapter 3.2 shall be assigned to packing groups I, II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, sub-section 34.4.1, in accordance with the following criteria:

(a) Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose;

(b) Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture (by mass) of potassium bromate and cellulose and the criteria for packing group I are not met;

(c) Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose and the criteria for packing groups I and II are not met.

Oxidizing liquids

Classification

2.2.51.1.8. When oxidizing liquid substances not mentioned by name in table A of Chapter 3.2 are assigned to the relevant entry in sub-section 2.2.51.3 on the basis of the test procedure in accordance with the Manual of Tests and Criteria, Part III, sub-section 34.4.2, the following criteria shall apply:

— A liquid substance shall be assigned to Class 5.1 if, in the 1:1 mixture, by mass, of substance and cellulose tested, it exhibits a pressure rise of 2070 kPa gauge or more and a mean pressure rise time equal to or less than the mean pressure rise time of a 1:1 mixture, by mass, of 65 % aqueous nitric acid and cellulose.

Assignment of packing groups

2.2.51.1.9. Oxidizing liquids classified under the various entries in table A of Chapter 3.2 shall be assigned to packing groups I, II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, section 34.4.2, in accordance with the following criteria:

(a) Packing group I: any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, spontaneously ignites; or the mean pressure rise time of a 1:1 mixture, by mass, of substance and cellulose is less than that of a 1:1 mixture, by mass, of 50 % perchloric acid and cellulose;

(b) Packing group II: any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 40 % aqueous sodium chlorate solution and cellulose; and the criteria for packing group I are not met;

(c) Packing group III: any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 65 % aqueous nitric acid and cellulose; and the criteria for packing groups I and II are not met.

2.2.51.2. Substances not accepted for carriage

2.2.51.2.1. The chemically unstable substances of Class 5.1 shall not be accepted for carriage unless the necessary steps have been taken to prevent their dangerous decomposition or polymerization during carriage. To this end it shall in particular be ensured that receptacles do not contain any material liable to promote these reactions.

2.2.51.2.2. The following substances and mixtures shall not be accepted for carriage:

— oxidizing solids, self-heating, assigned to UN No 3100, oxidizing solids, water-reactive, assigned to UN No 3121 and oxidizing solids, flammable, assigned to UN No 3137, unless they meet the requirements for Class 1 (see also 2.1.3.7);

— hydrogen peroxide, not stabilized or hydrogen peroxide, aqueous solutions, not stabilized containing more than 60 % hydrogen peroxide;

— tetranitromethane not free from combustible impurities;

— perchloric acid solutions containing more than 72 % (mass) acid, or mixtures of perchloric acid with any liquid other than water;

— chloric acid solution containing more than 10 % chloric acid or mixtures of chloric acid with any liquid other than water;

— halogenated fluor compounds other than UN Nos 1745 BROMINE PENTAFLUORIDE; 1746 BROMINE TRIFLUORIDE and 2495 IODINE PENTAFLUORIDE of Class 5.1 as well as UN Nos 1749 CHLORINE TRIFLUORIDE and 2548 CHLORINE PENTAFLUORIDE of Class 2;

— ammonium chlorate and its aqueous solutions and mixtures of a chlorate with an ammonium salt;

— ammonium chlorite and its aqueous solutions and mixtures of a chlorite with an ammonium salt;

— mixtures of a hypochlorite with an ammonium salt;

— ammonium bromate and its aqueous solutions and mixtures of a bromate with an ammonium salt;

— ammonium permanganate and its aqueous solutions and mixtures of a permanganate with an ammonium salt;

— ammonium nitrate containing more than 0,2 % combustible substances (including any organic substance calculated as carbon) unless it is a constituent of a substance or article of Class 1;

— fertilizers having an ammonium nitrate content (in determining the ammonium nitrate content, all nitrate ions for which a molecular equivalent of ammonium ions is present in the mixture shall be calculated as ammonium nitrate) or a content in combustible substances exceeding the values specified for the various AMMONIUM NITRATE FERTILIZER grades listed under UN Nos 2067 to 2070 except under the conditions applicable to Class 1;

— ammonium nitrate fertilizers which are assigned to the collective entry UN No 2072 AMMONIUM NITRATE FERTILIZER, N.O.S.;

— ammonium nitrite and its aqueous solutions and mixtures of an inorganic nitrite with an ammonium salt;

— mixtures of potassium nitrate, sodium nitrite and an ammonium salt.

2.2.51.3 List of collective entries

Oxidizing substances

Subsidiary risk	Physical state	Classification code	UN No	Name
Without subsidiary risk O	liquid	O1	3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3214	PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3216	PERSULPHATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
			3139	OXIDIZING, LIQUID, N.O.S.
	solid	O2	1450	BROMATES, INORGANIC, N.O.S
			1461	CHLORATES, INORGANIC, N.O.S.
			1462	CHLORITES, INORGANIC, N.O.S.
			1477	NITRATES, INORGANIC, N.O.S
			1481	PERCHLORATES, INORGANIC, N.O.S.
			1482	PERMANGANATES, INORGANIC, N.O.S.
			1483	PEROXIDES, INORGANIC, N.O.S
			2072	AMMONIUM NITRATE FERTILIZER, N.O.S. *NOTE:* Not to be accepted for carriage. See however UN Nos. 2067, 2068, 2069 and 2070.
			2627	NITRITES, INORGANIC, N.O.S.
			3212	HYPOCHLORITES, INORGANIC, N.O.S.
			3215	PERSULPHATES, INORGANIC, N.O.S.
			1479	OXIDIZING SOLID, N.O.S.
	articles	O3	3356	OXYGEN GENERATOR, CHEMICAL
Solid, flammable		OF	3137	OXIDIZING SOLID, FLAMMABLE, N.O.S. (not to be accepted for carriage, see 2.2.51.2)
Solid, self-heating		OS	3100	OXIDIZING SOLID, SELF-HEATING, N.O.S. (not to be accepted for carriage, see 2.2.51.2)
Solid, water reactive		OW	3121	OXIDIZING SOLID, WATER REACTIVE, N.O.S. (not to be accepted for carriage, see 2.2.51.2)
Toxic OT	liquid	OT1	3099	OXIDIZING LIQUID, TOXIC, N.O.S.
	solid	OT2	3087	OXIDIZING SOLID, TOXIC, N.O.S.
Corrosive OC	liquid	OC1	3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.
	solid	OC2	3085	OXIDIZING SOLID, CORROSIVE, N.O.S.
Toxic, corrosive		OTC		(No other collective entry with this classification code available; classification where necessary, under a collective entry with a classification code to be determined according to the precedence of hazard table in 2.1.3.9.)

2.2.52. *Class 5.2 Organic peroxides*

2.2.52.1. Criteria

2.2.52.1.1. The heading of Class 5.2 covers organic peroxides and formulations of organic peroxides.

2.2.52.1.2. The substances of Class 5.2 are subdivided as follows:

— P1 Organic peroxides, not temperature controlled;

— P2 Organic peroxides, temperature-controlled (not to be accepted for carriage).

Definition

2.2.52.1.3. Organic peroxides are organic substances which contain the bivalent -O-O- structure and may be considered derivatives of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals.

Properties

2.2.52.1.4. Organic peroxides are liable to exothermic decomposition at normal or elevated temperatures. The decomposition can be initiated by heat, contact with impurities (e.g. acids, heavy-metal compounds, amines), friction or impact. The rate of decomposition increases with temperature and varies with the organic peroxide formulation. Decomposition may result in the evolution of harmful, or flammable, gases or vapours. For certain organic peroxides the temperature shall be controlled during transport. Some organic peroxides may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Many organic peroxides burn vigorously. Contact of organic peroxides with the eyes is to be avoided. Some organic peroxides will cause serious injury to the cornea, even after brief contact, or will be corrosive to the skin.

NOTE: Test methods for determining the flammability of organic peroxides are set out in the Manual of Tests and Criteria, Part III, sub-section 32.4. Because organic peroxides may react vigorously when heated, it is recommended to determine their flash-point using small sample sizes such as described in ISO 3679:1983.

Classification

2.2.52.1.5. Any organic peroxide shall be considered for classification in Class 5.2 unless the organic peroxide formulation contains:

(a) Not more than 1,0 % available oxygen from the organic peroxides when containing not more than 1,0 % hydrogen peroxide;

(b) Not more than 0,5 % available oxygen from the organic peroxides when containing more than 1,0 % but not more than 7,0 % hydrogen peroxide.

NOTE: The available oxygen content (%) of an organic peroxide formulation is given by the formula

$$16 \times \sum (n_i \times c_i / m_i)$$

where: n_i = number of peroxygen groups per molecule of organic peroxide i;

c_i = concentration (mass %) of organic peroxide i; and

m_i = molecular mass of organic peroxide i.

2.2.52.1.6. Organic peroxides are classified into seven types according to the degree of danger they present. The types of organic peroxide range from type A, which is not accepted for carriage in the packaging in which it is tested, to type G, which is not subject to the requirements of Class 5.2. The classification of types B to F is directly related to the maximum quantity allowed in one packaging. The principles to be applied to the classification of substances not listed in 2.2.52.4 are set out in the Manual of Tests and Criteria, Part II.

2.2.52.1.7. Organic peroxides and formulations of organic peroxides which have already been classified and assigned to the appropriate generic entry are listed in 2.2.52.4 together with the applicable UN number and packing method.

These generic entries specify:

— the type (B to F) of organic peroxide (see 2.2.52.1.6 above);

— physical state (liquid/solid).

Mixtures of these formulations may be classified as the same type of organic peroxide as that of the most dangerous component and be carried under the conditions of transport given for this type. However, as two stable components can form a thermally less stable mixture, the self-accelerating decomposition temperature (SADT) of the mixture shall be determined.

2.2.52.1.8. Classification of organic peroxides, formulations or mixtures of organic peroxides not listed in 2.2.52.4 and assignment to a collective entry shall be made by the competent authority of the country of origin. The statement of approval shall contain the classification and the relevant transport conditions. If the country of origin is not a COTIF Member State, the classification and conditions of carriage shall be recognized by the competent authority of the first COTIF Member State reached by the consignment.

2.2.52.1.9. Samples of organic peroxides or formulations of organic peroxides not listed in 2.2.52.4, for which a complete set of test results is not available and which are to be carried for further testing or evaluation, shall be assigned to one of the appropriate entries for organic peroxides type C provided the following conditions are met:

— the available data indicate that the sample would be no more dangerous than organic peroxides type B;

— the sample is packaged in accordance with packing method OP2 and the quantity per wagon is limited to 10 kg;

— samples requiring temperature control shall not be accepted for carriage by rail.

Desensitization of organic peroxides

2.2.52.1.10. In order to ensure safety during carriage, organic peroxides are in many cases desensitized by organic liquids or solids, inorganic solids or water. Where a percentage of a substance is stipulated, this refers to the percentage by mass, rounded to the nearest whole number. In general, desensitization shall be such that, in case of spillage, the organic peroxide will not concentrate to a dangerous extent.

2.2.52.1.11. Unless otherwise stated for the individual organic peroxide formulation, the following definition(s) shall apply to diluents used for desensitization:

— diluents type A are organic liquids which are compatible with the organic peroxide and which have a boiling point of not less than 150 °C. Type A diluents may be used for desensitizing all organic peroxides.

— diluents type B are organic liquids which are compatible with the organic peroxide and which have a boiling point of less than 150 °C but not less than 60 °C and a flash-point of not less than 5 °C.

Type B diluents may be used for desensitization of all organic peroxides provided that the boiling point of the liquid is at least 60 °C higher than the SADT in a 50 kg package.

2.2.52.1.12. Diluents, other than type A or type B, may be added to organic peroxide formulations as listed in 2.2.52.4 provided that they are compatible. However, replacement of all or part of a type A or type B diluent by another diluent with differing properties requires that the organic peroxide formulation be re-assessed in accordance with the normal acceptance procedure for Class 5.2.

2.2.52.1.13. Water may only be used for the desensitization of organic peroxides which are listed in 2.2.52.4 or in the competent authority decision according to 2.2.52.1.8 as being 'with water' or 'as a stable dispersion in water'. Samples of organic peroxides or formulations of organic peroxides not listed in 2.2.52.4 may also be desensitized with water provided the requirements of 2.2.52.1.9 are met.

2.2.52.1.14. Organic and inorganic solids may be used for desensitization of organic peroxides provided that they are compatible. Compatible liquids and solids are those which have no detrimental influence on the thermal stability and hazard type of the organic peroxide formulation.

2.2.52.1.15. — 2.2.52.1.18. (Reserved)

2.2.52.2. Substances not accepted for carriage

The following organic peroxides shall not be accepted for carriage under the requirements of Class 5.2:

— Organic peroxides, type A (see Manual of Tests and Criteria, Part II, paragraph 20.4.3 (a));

— The following organic peroxides requiring temperature control are not to be accepted for carriage by rail:

— organic peroxides, types B and C with an (SADT) ≤ 50 °C:

UN 3111 ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED;

UN 3112 ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED;

UN 3113 ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED;

UN 3114 ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED;

— organic peroxides type D showing a violent or medium effect when heated under confinement with an SADT ≤ 50 °C or showing a low or no effect when heated under confinement with an SADT ≤ 45 °C:

UN 3115 ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED;

UN 3116 ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED;

— organic peroxides types E and F with an SADT≤ 45 °C:

UN 3117 ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED;

UN 3118 ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED;

UN 3119 ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED;

UN 3120 ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED;

2.2.52.3. List of generic entries

Organic peroxides

Not requiring temperature control — P1

	ORGANIC PEROXIDE TYPE A, LIQUID	Not to be accepted for carriage, see 2.2.52.2
	ORGANIC PEROXIDE TYPE A, SOLID	
3101	ORGANIC PEROXIDE TYPE B, LIQUID	
3102	ORGANIC PEROXIDE TYPE B, SOLID	
3103	ORGANIC PEROXIDE TYPE C, LIQUID	
3104	ORGANIC PEROXIDE TYPE C, SOLID	
3105	ORGANIC PEROXIDE TYPE D, LIQUID	
3106	ORGANIC PEROXIDE TYPE D, SOLID	
3107	ORGANIC PEROXIDE TYPE E, LIQUID	
3108	ORGANIC PEROXIDE TYPE E, SOLID	
3109	ORGANIC PEROXIDE TYPE F, LIQUID	
3110	ORGANIC PEROXIDE TYPE F, SOLID	
	ORGANIC PEROXIDE TYPE G, LIQUID	Not subject to the requirements of Class 5.2, see 2.2.52.1.6
	ORGANIC PEROXIDE TYPE G, SOLID	

Requiring temperature control — P2

3111	ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED	(not to be accepted for carriage by rail, see 2.2.52.2)
3112	ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED	
3113	ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED	
3114	ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED	
3115	ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED	
3116	ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED	
3117	ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED	
3118	ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED	
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED	
3120	ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED	

2.2.52.4. List of currently assigned organic peroxides

NOTE: In the 'packing method' column of the following Table:

(a) The letters 'OP' followed by a number indicate the packing method (see 4.1.4.1 packing instruction P520 and 4.1.7.1);

(b) The letter 'N' indicates that carriage in IBCs is permitted (see 4.1.4.2 packing instruction IBC 520 and 4.1.7.2);

(c) The letter 'M' indicates that carriage in tanks is permitted (see 4.2.1.13 and 4.2.4.2 portable tank instruction T23, 4.3.2 and 4.3.4.1.3(e) tank code L4BN for liquids and S4AN for solids).

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
ACETYL ACETONE PEROXIDE	≤ 42	≥ 48			≥ 8	OP7	3105	(2)
" (as a paste)	≤ 32					OP7	3106	(20)
ACETYL BENZOYL PEROXIDE	≤ 45	≥ 55				OP7	3105	
ACETYLCYCLOHEXANE SULPHONYL PEROXIDE	≤ 82				≥ 12		3112	PROHIBITED
"	≤ 32		≥ 68				3115	PROHIBITED
tert-AMYL HYDROPEROXIDE	≤ 88	≥ 6			≥ 6	OP8	3107	
tert-AMYL PEROXYACETATE	≤ 62	≥ 38				OP8	3107	
tert-AMYL PEROXYBENZOATE	≤ 100					OP5	3103	
tert-AMYL PEROXY-2-ETHYLHEXANOATE	≤ 100						3115	PROHIBITED
tert-AMYL PEROXY-2-ETHYLHEXYL CARBONATE	≤ 100					OP7	3105	
tert-AMYL PEROXY NEODECANOATE	≤ 77		≥ 23				3115	PROHIBITED
tert-AMYL PEROXYPIVALATE	≤ 77		≥ 23				3113	PROHIBITED
tert-AMYLPEROXY-3,5,5-TRIMETHYLHEXANOATE	≤ 100					OP5	3101	(3)
tert-BUTYL CUMYL PEROXIDE	> 42-100					OP7	3105	
"	≤ 42			≥ 58		OP7	3106	
n-BUTYL-4,4-DI-(tert-BUTYLPEROXY) VALERATE	> 52-100					OP5	3103	
"	≤ 52			≥ 48		OP7	3106	
"	≤ 42			≥ 58		OP8	3108	
tert-BUTYL HYDROPEROXIDE	> 79-90				≥ 10	OP5	3103	(13)
"	≤ 80	≥ 20				OP7	3105	(4) (13)

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) ([1])	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
"	≤ 79				> 14	OP8	3107	([13]) ([23])
"	≤ 72				≥ 28	OP8, N, M	3109	([13])
tert-BUTYL HYDROPEROXIDE + DI-tert-BUTYLPEROXIDE	< 82 + > 9				≥ 7	OP5	3103	([13])
tert-BUTYL MONOPEROXYMALEATE	> 52-100					OP5	3102	([3])
"	≤ 52	≥ 48				OP6	3103	
"	≤ 52			≥ 48		OP8	3108	
" (as a paste)	≤ 52					OP8	3108	
tert-BUTYL MONOPEROXYPHTHALATE	≤ 100					OP5	3102	([3])
tert-BUTYL PEROXYACETATE	> 52-77	≥ 23				OP5	3101	([3])
"	> 32-52	≥ 48				OP6	3103	
"	≤ 32	≥ 68				OP8,N	3109	
" (in tanks)	≤ 32		≥ 68				3109	PROHIBITED
"	≤ 22		≥ 78			OP8	3109	([25])
tert-BUTYL PEROXYBENZOATE	> 77-100	< 22				OP5	3103	
"	> 52-77	≥ 23				OP7	3105	
"	≤ 52			≥ 48		OP7	3106	
tert-BUTYL PEROXYBUTYL FUMARATE	≤ 52	≥ 48				OP7	3105	
tert-BUTYL PEROXYCROTONATE	≤ 77	≥ 23				OP7	3105	
tert-BUTYL PEROXYDIETHYL ACETATE	≤ 100						3113	PROHIBITED
tert-BUTYL PEROXYDIETHYL ACETATE + tert-BUTYL PEROXYBENZOATE	≤ 33 + ≤ 33	≥ 33				OP7	3105	
tert-BUTYL PEROXY-2-ETHYLHEXANOATE	> 52-100						3113	PROHIBITED
"	> 32-52		≥ 48				3117	PROHIBITED

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
"	≤ 52			≥ 48			3118	PROHIBITED
"	≤ 32		≥ 68				3119	PROHIBITED
" (in IBCs)	≤ 32		≥ 68				3119	PROHIBITED
" (in tanks)	≤ 32		≥ 68				3119	PROHIBITED
tert-BUTYL PEROXY-2-ETHYLHEX-ANOATE + 2,2-DI-(tert-BUTYLPEROXY)-BUTANE	≤ 12 + ≤ 14	> 14		≥ 60		OP7	3106	
"	≤ 31 + ≤ 36		≥ 33				3115	PROHIBITED
tert-BUTYL PEROXY-2-ETHYLHEXYLCARBONATE	≤ 100					OP7	3105	
tert-BUTYL PEROXYISOBUTYRATE	> 52-77		> 23				3111	PROHIBITED
"	≤ 52		> 48				3115	PROHIBITED
tert-BUTYLPEROXY ISOPROPYL CARBONATE	≤ 77	≥ 23				OP5	3103	
1-(2-tert-BUTYLPEROXY ISOPROPYL)-3-ISOPROPE-NYLBENZENE	≤ 77	≥ 23				OP7	3105	
"	≤ 42				≥ 58	OP8	3118	
tert-BUTYL PEROXY-2-METHYLBENZOATE	≤ 100					OP5	3103	
tert-BUTYL PEROXYNEODECANOATE	> 77-100						3115	PROHIBITED
"	≤ 77		≥ 23				3115	PROHIBITED
" (as a stable dispersion in water)	≤ 42						3119	PROHIBITED
" (as a stable dispersion in water) in IBCs	≤ 52						3117	PROHIBITED
" (as a stable dispersion in water) (frozen)	≤ 42						3118	PROHIBITED
"	≤ 32	≥ 68					3119	PROHIBITED
tert-BUTYL PEROXYNEOHEPTANOATE	≤ 77	≥ 23					3115	PROHIBITED
3-tert-BUTYLPEROXY-3-PHENYL PHTHALIDE	≤ 100					OP7	3106	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) ([1])	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
tert-BUTYL PEROXYPIVALATE	> 67-77	≥ 23					3113	PROHIBITED
”	> 27-67		≥ 33				3115	PROHIBITED
”	≤ 27		≥ 73				3119	PROHIBITED
” (in IBCs)	≤ 27		≥ 73				3119	PROHIBITED
” (in tanks)	≤ 27		≥ 73				3119	PROHIBITED
tert-BUTYLPEROXY STEARYL CARBONATE	≤ 100					OP7	3106	
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	> 32-100					OP7	3105	
”	≤ 32	≥ 68				OP8,N	3109	
” (in tanks)	≤ 32		≥ 68				3119	PROHIBITED
3-CHLOROPEROXYBENZOIC ACID	> 57-86				≥ 14	OP1	3102	([3])
”	57			≥ 3	≥ 40	OP7	3106	
”	≤ 77			≥ 6	≥ 17	OP7	3106	
CUMYL HYDROPEROXIDE	> 90-98	≤ 10				OP8	3107	([13])
”	≤ 90	≥ 10				OP8, M, N	3109	([13]) ([18])
CUMYLPEROXYNEODECANOATE	≤ 77		≥ 23				3115	PROHIBITED
” (as a stable dispersion in water)	≤ 52						3119	PROHIBITED
” (as a stable dispersion in water) in IBCs	≤ 52						3119	PROHIBITED
CUMYLPEROXYNEODECANOATE	≤ 77	≥ 23					3115	PROHIBITED
CUMYLPEROXYNEOHEPTANOATE	≤ 77		≥ 23				3115	PROHIBITED
CYCLOHEXANONE PEROXIDE(S)	≤ 91				≥ 9	OP6	3104	([13])
”	≤ 72		≥ 28			OP7	3105	([5])
” (as a paste)	≤ 72					OP7	3106	([5]) ([20])
”	≤ 32			≥ 68			Exempt	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) ([1])	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
DIACETONE ALCOHOL PEROXIDES	≤ 57		≥ 26		≥ 8		3115	PROHIBITED
DIACETYL PEROXIDE	≤ 27		≥ 73				3115	PROHIBITED
DI-tert-AMYL PEROXIDE	≤ 100					OP8	3107	
1,1-DI-(tert-AMYLPEROXY)CYCLOHEXANE	≤ 82	≥ 18				OP6	3103	
DIBENZOYL PEROXIDE	> 51-100			≤ 48		OP2	3102	([3])
"	> 77-94				≥ 6	OP4	3102	([3])
"	≤ 77				≥ 23	OP6	3104	
"	≤ 62			≥ 28	≥ 10	OP7	3106	
" (as a paste)	> 52-62					OP7	3106	([20])
"	> 35-52			≥ 48		OP7	3106	
"	> 36-42	≥ 18			≤ 40	OP8	3107	
"	> 36-42	≥ 58				OP8	3107	
" (as a paste)	≤ 56,5				≥ 15	OP8	3108	
" (as a paste)	≤ 52					OP8	3108	([20])
" (as a stable dispersion in water)	≤42					OP8, N	3109	
"	≤ 35			≥ 65			Exempt	
DIBENZYLPEROXYDICARBONATE	≤ 87				≥ 13		3112	PROHIBITED
DI-(4-tert-BUTYLCYCLOHEXYL)-PEROXYDICARBON-ATE	≤ 100						3114	PROHIBITED
" (as a stable dispersion in water)	≤ 42						3119	PROHIBITED
DI-tert-BUTYL PEROXIDE	> 32-100					OP8	3107	
"	≤ 52		≥ 48			OP8, N	3109	([25])
"	≤ 32	≥ 68				M	3109	
DI-tert-BUTYL PEROXYAZELATE	≤ 52	≥ 48				OP7	3105	
2,2-DI-(tert-BUTYLPEROXY)BUTANE	≤ 52	≥ 48				OP6	3103	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
1,1-DI-(tert-BUTYLPEROXY)CYCLOHEXANE	> 80-100					OP5	3101	(3)
"	> 52-80	≥ 20				OP5	3103	
"	> 42-52	≥ 48				OP7	3105	
"	≤ 42	≥ 13		≥ 45		OP7	3106	
"	≤ 27	≥ 36				OP8	3107	(21)
"	≤ 42	≥ 58				OP8, N	3109	
"	≤ 13	≥ 13	≥ 74			OP8	3109	
DI-n-BUTYLPEROXYDICARBONATE	> 27-52	≥ 48					3115	PROHIBITED
"	≤ 27		≥ 73				3117	PROHIBITED
"	≤ 42						3118	PROHIBITED
DI-sec-BUTYLPEROXYDICARBONATE	> 52-100						3113	PROHIBITED
"	≤ 52		≥ 48				3115	PROHIBITED
DI-(2-tert-BUTYLPEROXYISOPROPYL)BENZENE(S)	> 42-100			≤ 57		OP7	3106	
"	≤ 42			≥ 58			Exempt	
DI-(tert-BUTYLPEROXY)PHTHALATE	> 42-52	≥ 48				OP7	3105	
" (as a paste)	≤ 52					OP7	3106	(20)
"	≤ 42	≥ 58				OP8	3107	
2,2-DI-(tert-BUTYLPEROXY)PROPANE	≤ 52	≥ 48				OP7	3105	
"	≤ 42	≥ 13		≥ 45		OP7	3106	
1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLO-HEXANE	> 90-100					OP5	3101	(3)
"	> 57-90	≥ 10				OP5	3103	
"	≤ 77		≥ 23			OP7	3105	
"	≤ 57			≥ 43		OP7	3106	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
”	≤ 57	≥ 43				OP8	3107	
”	≤ 32	≥ 26	≥ 42			OP8	3107	
DICETYLPEROXYDICARBONATE	≤ 100						3116	PROHIBITED
” (as a stable dispersion in water)	≤ 42						3119	PROHIBITED
DI-4-CHLOROBENZOYL PEROXIDE	≤ 77				≥ 23	OP5	3102	(3)
” (as a paste)	≤ 52					OP7	3106	(20)
”	≤ 32			≥ 68			Exempt	
DICUMYL PEROXIDE	> 42-100			≤ 57		OP8, M	3110	(12)
”	≤ 52			≥ 48			Exempt	
DICYCLOHEXYLPEROXYDICARBONATE	> 91-100						3112	PROHIBITED
”	≤ 91				≥ 9		3114	PROHIBITED
DIDECANOYL PEROXIDE	≤ 100						3114	PROHIBITED
2,2-DI-(4,4-DI (tert-BUTYLPEROXY) CYCLOHEXYL)-PROPANE	≤ 42			≥ 58		OP7	3106	
”	≤ 22		≥ 78			OP8	3107	
DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 77				≥ 23	OP5	3102	(3)
” (as a paste with silicon oil)	≤ 52					OP7	3106	
DI-(2-ETHOXYETHYL)-PEROXYDICARBONATE	≤ 52			≥ 48			3115	PROHIBITED
DI-(2-ETHYLHEXYL)-PEROXYDICARBONATE	> 77-100						3113	PROHIBITED
”	≤ 77		≥ 23				3115	PROHIBITED
” (as a stable dispersion in water)	≤ 62						3117	PROHIBITED
” (as a stable dispersion in water) in IBCs	≤ 52						3119	PROHIBITED
” (as a stable dispersion in water)	≤ 52						3119	PROHIBITED
” (as a stable dispersion in water (frozen))	≤ 42						3118	PROHIBITED

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) [1]	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
DIETHYLPEROXYDICARBONATE	≤ 27		≥ 73				3115	PROHIBITED
2,2-DIHYDROPEROXYPROPANE	≤ 27			≥ 73		OP5	3102	[3]
DI-(1-HYDROXYCYCLOHEXYL) PEROXIDE	≤ 100					OP7	3106	
DISOBUTYRYL PEROXIDE	> 32-52		≥ 48				3111	PROHIBITED
”	≤ 32		≥ 68				3115	PROHIBITED
DI-ISOPROPYLBENZENE DIHYDROPEROXIDE	≤ 82	≥ 5			≥ 5	OP7	3106	[24]
DI-ISOPROPYL-PEROXYDICARBONATE	> 52-100						3112	PROHIBITED
”	≤ 52		≥ 48				3115	PROHIBITED
DIISOTRIDECYLPEROXYDICARBONATE	≤ 100						3115	PROHIBITED
DILAUROYL PEROXIDE	≤ 100					OP7	3106	
” (as a stable dispersion in water)	≤ 42					OP8, N	3109	
DI-(3-METHOXYBUTYL)-PEROXYDICARBONATE	≤ 52		≥ 48				3115	PROHIBITED
DI-(2-METHYLBENZOYL)-PEROXIDE	≤ 87				≥ 13		3112	PROHIBITED
DI-(4-METHYLBENZOYL) PEROXIDE (as a paste with silicon oil)	≤ 52						3106	
DI-(3-METHYLBENZOYL)-PEROXIDE + BENZOYL-(3-METHYLBENZOYL)-PEROXIDE + DIBENZOYL PEROXIDE	≤ 20 + ≤ 18 + ≤ 4		≥ 58				3115	PROHIBITED
2,5-DIMETHYL-2,5-DI-(BENZOYLPEROXY) HEXANE	> 82-100					OP5	3102	[3]
”	≤ 82			≥ 18		OP7	3106	
”	≤ 82				≥ 18	OP5	3104	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY) HEXANE	> 52-100					OP7	3105	
”	≤ 52			≥ 48		OP7	3106	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) [1]	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
” (as a paste)	≤ 47					OP8	3108	
”	≤ 52	≥ 48				OP8	3109	
”	≤ 77			≥ 23		OP8	3108	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXYNE-3	> 52-86	≥ 14				OP5	3103	([26])
”	≤ 52			≥ 48		OP7	3106	
”	> 86-100					OP5	3101	([3])
2,5-DIMETHYL-2,5-DI-(2-ETHYLHEXANOYLPEROXY)-HEXANE	≤ 100						3115	PROHIBITED
2,5-DIMETHYL-2,5-DIHYDROPEROXY HEXANE	≤ 82				≥ 18	OP6	3104	
2,5-DIMETHYL-2,5-DI-(3,5,5-TRIMETHYLHEXAN-OYLPEROXY)HEXANE	≤ 77	≥ 23				OP7	3105	
1,1-DIMETHYL-3-HYDROXYBUTYLPEROXY-NEOHEPT-ANOATE	≤ 52	≥ 48					3117	PROHIBITED
DIMYRISTYLPEROXYDICARBONATE	≤ 100						3116	PROHIBITED
” (as a stable dispersion in water)	≤ 42						3119	PROHIBITED
” (as a stable dispersion in water) in IBCs	≤ 42						3119	PROHIBITED
DI-(2-NEODECANOYL PEROXYISOPROPYL)-BENZENE	≤ 52	≥ 48					3115	PROHIBITED
DI-n-NONANOYLPEROXIDE	≤ 100						3116	PROHIBITED
DI-n-OCTANOYLPEROXIDE	≤ 100						3114	PROHIBITED
DIPEROXYAZELAIN ACID	≤ 27			≥ 73			3116	PROHIBITED
DIPEROXY DODECANE DIACID	> 13-42			≥ 58			3116	PROHIBITED
”	≤ 13			≥ 87			Exempt	
DI-(2-PHENOXYETHYL)PEROXYDICARBONATE	> 85-100					OP5	3102	([3])
”	≤ 85				≤ 15	OP7	3106	

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) ([1])	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
DIPROPIONYLPEROXIDE	≤ 27		≥ 73				3117	PROHIBITED
DI-n-PROPYLPEROXYDICARBONATE	≤ 100						3113	PROHIBITED
”	≤ 77		≥ 23				3113	PROHIBITED
DISTEARYL PEROXYDICARBONATE	≤ 87			≥ 13		OP7	3106	
DISUCCINIC ACID PEROXIDE	> 72-100					OP4	3102	([3]) ([17])
”	≤ 72				≥ 28		3116	PROHIBITED
DI-(3,5,5-TRIMETHYLHEXANOYL)-PEROXIDE	> 38-82	≥ 18					3115	PROHIBITED
” (as a stable dispersion in water)	≤ 52						3119	PROHIBITED
”	≤ 38	≥ 62					3119	PROHIBITED
” (in IBCs)	≤ 38	≥ 62					3119	PROHIBITED
” (in tanks)	≤ 38	≥ 62					3119	PROHIBITED
DI-(3,5,5-TRIMETHYL-DIOXOLANYL-3)-PEROXIDE (as a paste)	≤ 52						3116	PROHIBITED
ETHYL 3,3-DI-(tert-AMYLPEROXY) BUTYRATE	≤ 67	≥ 33				OP7	3105	
ETHYL 3,3-DI-(tert-BUTYLPEROXY) BUTYRATE	> 77-100					OP5	3103	
”	≤ 77	≥ 23				OP7	3105	
”	≤ 52			≥ 48		OP7	3106	
3,3,6,6,9,9-HEXAMETHYL-1,2,4,5-TETRAOXACYCLO-NONANE	> 52-100					OP4	3102	([3])
”	≤ 52	≥ 48				OP7	3105	
”	≤ 52			≥ 48		OP7	3106	
tert-HEXYLPEROXYNEODECANOATE	≤ 71	≥ 29				OP7	3106	
tert-HEXYLPEROXYPIVALATE	≤ 72		≥ 28				3115	PROHIBITED

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
ISOPROPYL-sec-BUTYLPEROXYDICARBONATE + DI-sec-BUTYLPEROXYDICARBONATE + DI-ISOPROPYLPEROXY DICARBONATE	≤ 32 + ≤ 15-18 + ≤ 12-15	≥ 38					3115	PROHIBITED
ISOPROPYL-sec-BUTYLPEROXYDICARBONATE + DI-sec-BUTYLPEROXYDICARBONATE + DI-ISOPROPYLPEROXY DICARBONATE	≤ 52 + ≤ 28 + ≤ 22						3111	PROHIBITED
ISOPROPYLCUMYL HYDROPEROXIDE	≤ 72	≥ 28				OP8, M, N	3109	(13)
p-MENTHYL HYDROPEROXIDE	> 72-100					OP7	3105	(13)
”	≤ 72	≥ 28				OP8, M, N	3109	(27)
METHYLCYCLOHEXANONE PEROXIDE(S)	≤ 67		≥ 33	≥ 48			3105	PROHIBITED
METHYL ETHYL KETONE PEROXIDE(S)	≤ 52	≥ 48				OP5	3101	(3) (8) (13)
”	≤ 45	≥ 55				OP7	3105	(9)
”	≤ 40	≥ 60				OP8	3107	(10)
”	≤ 37	≥ 55			≥ 8	OP7	3105	(9)
METHYL ISOBUTYL KETONE PEROXIDE(S)	≤ 62			≥ 19		OP7	3105	(22)
ORGANIC PEROXIDE, LIQUID, SAMPLE						OP2	3103	(11)
ORGANIC PEROXIDE, LIQUID, SAMPLE, TEMPERATURE CONTROLLED							3113	PROHIBITED
ORGANIC PEROXIDE, SOLID, SAMPLE						OP2	3104	(11)
ORGANIC PEROXIDE, SOLID, SAMPLE, TEMPERATURE CONTROLLED							3104	PROHIBITED
PEROXYACETIC ACID, TYPE D, stabilized	≤ 43					OP7	3105	(13) (14) (19)
PEROXYACETIC ACID, TYPE E, stabilized	≤ 43					OP8	3107	(13) (15) (19)
PEROXYACETIC ACID, TYPE F, stabilized	≤ 43					OP8, N	3109	(13) (16) (19)
PINANYL HYDROPEROXIDE	56-100					OP7	3105	(13)

ORGANIC PEROXIDE	Concentration %	Diluent Type A (%)	Diluent Type B (%) (1)	Inert solid (%)	Water (%)	Packing method	UN number (generic entry)	Subsidiary risks and remarks
”	< 56	> 44				OP8, M	3109	
TETRAHYDRONAPHTHYL HYDROPEROXIDE	≤ 100					OP7	3105	
1,1,3,3-TETRAMETHYLBUTYLHY DROPEROXIDE	≤ 100						3115	
1,1,3,3-TETRAMETHYL BUTYLPEROXY-2-ETHYLHEX-ANOATE	≤ 100						3115	PROHIBITED
1,1,3,3-TETRAMETHYLBUTYL PEROXYNEODEC-ANOATE	≤ 72		≥ 28				3115	PROHIBITED
” (as a stable dispersion in water)	≤ 52						3119	PROHIBITED
1,1,3,3-TETRAMETHYLBUTYL PEROXYPHENOXY-ACETATE	≤ 37		≥ 63				3115	PROHIBITED
3,6,9-TRIETHYL-3,6,9-TRIMETHYL -1,4,7-TRIPER-OXONANE	≤ 42	≥ 58				OP7	3105	(28)

NOTE: *(see last column of Table in 2.2.52.4)*

(1) Diluent type B may always be replaced by diluent type A.
(2) Available oxygen ≤ 4,7 %.
(3) ‘EXPLOSIVE’ subsidiary risk label in accordance with Model No. 1 required (see 5.2.2.2.2).
(4) Diluent may be replaced by di-tert-butyl peroxide.
(5) Available oxygen ≤ 9 %.
(6) (Reserved)
(7) (Reserved)
(8) Available oxygen > 10 %.
(9) Available oxygen ≤ 10 %.
(10) Available oxygen ≤ 8,2 %.
(11) See 2.2.52.1.9.
(12) Up to 2 000 kg per receptacle assigned to ORGANIC PEROXIDE TYPE F on the basis of large scale trials.
(13) ‘CORROSIVE’ subsidiary risk label in accordance with Model No. 8 required (see 5.2.2.2.2).
(14) Peroxyacetic acid formulations which fulfil the criteria of the Manual of Tests and Criteria, paragraph 20.4.3 (d).
(15) Peroxyacetic acid formulations which fulfil the criteria of the Manual of Tests and Criteria, paragraph 20.4.3 (e).
(16) Peroxyacetic acid formulations which fulfil the criteria of the Manual of Tests and Criteria, paragraph 20.4.3 (f).
(17) Addition of water to this organic peroxide will decrease its thermal stability.
(18) No ‘CORROSIVE’ subsidiary risk label according to Model No. 8 (see 5.2.2.2.2) required for concentrations below 80 %.
(19) Mixtures with hydrogen peroxide, water and acid(s).
(20) With diluent type A, with or without water.
(21) With ≥ 36 %, by mass, ethylbenzene in addition to diluent type A.
(22) With ≥ 19 %, by mass, methyl isobutyl ketone in addition to diluent type A.
(23) With < 6 % di-tert-butyl peroxide.
(24) With ≤ 8 % 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.
(25) Diluent type B with boiling point > 110 °C.
(26) With < 0,5 % hydroperoxide content.
(27) For concentrations more than 56 %, ‘CORROSIVE’ subsidiary risk label in accordance with Model No. 8 required.
(28) Available active oxygen ≤ 7,6 % in diluent Type A having a 95 % boil-off point in the range of 200–260 °C.

2.2.61. *Class 6.1 Toxic substances*

2.2.61.1. Criteria

2.2.61.1.1. The heading of Class 6.1 covers substances of which it is known by experience or regarding which it is presumed from experiments on animals that in relatively small quantities they are able by a single action or by action of short duration to cause damage to human health, or death, by inhalation, by cutaneous absorption or by ingestion.

2.2.61.1.2. Substances of Class 6.1 are subdivided as follows:

T Toxic substances without subsidiary risk

- T1 Organic, liquid
- T2 Organic, solid
- T3 Organometallic substances
- T4 Inorganic, liquid
- T5 Inorganic, solid
- T6 Liquid, used as pesticides
- T7 Solid, used as pesticides
- T8 Samples
- T9 Other toxic substances

TF Toxic substances, flammable

- TF1 Flammable, liquid
- TF2 Flammable, liquid, used as pesticides
- TF3 Toxic substances, flammable, solid

TS Toxic substances, self-heating, solid

TW Toxic substances, which, in contact with water, emit flammable gases

- TW1 Liquid
- TW2 Solid

TO Toxic substances, oxidizing

- TO1 Liquid
- TO2 Solid

TC Toxic substances, corrosive

- TC1 Organic, liquid
- TC2 Organic, solid
- TC3 Inorganic, liquid
- TC4 Inorganic, solid

TFC Toxic substances, flammable, corrosive

Definitions

2.2.61.1.3. For the purposes of this Directive:

LD_{50} for acute oral toxicity is that dose of the substance administered which is most likely to cause death within 14 days in one half of both male and female young adult albino rats. The number of animals tested shall be sufficient to give a statistically significant result and be in conformity with good pharmacological practice. The result is expressed in milligrams per kg body mass.

LD_{50} for acute dermal toxicity is that dose of the substance which, administered by continuous contact for 24 hours with the bare skin of albino rabbits, is most likely to cause death within 14 days in one half of the animals tested. The number of animals tested shall be sufficient to give a statistically significant result and be in conformity with good pharmacological practice. The result is expressed in milligrams per kg body mass.

LC_{50} for acute toxicity on inhalation is that concentration of vapour, mist or dust which, administered by continuous inhalation to both male and female young adult albino rats for one hour, is most likely to cause death within 14 days in one half of the animals tested. A solid substance shall be tested if at least 10 % (by mass) of its total mass is likely to be dust in a respirable range, e.g. the aerodynamic diameter of that particle-fraction is 10 µm or less. A liquid substance shall be tested if a mist is likely to be generated in a leakage of the transport containment. Both for solid and liquid substances more than 90 % (by mass) of a specimen prepared for inhalation toxicity shall be in the respirable range as defined above. The result is expressed in milligrams per litre of air for dusts and mists or in millilitres per cubic metre of air (parts per million) for vapours.

Classification and assignment of packing groups

2.2.61.1.4. Substances of Class 6.1 shall be classified in three packing groups according to the degree of danger they present for carriage, as follows:

Packing group I: highly toxic substances

Packing group II: toxic substances

Packing group III: slightly toxic substances.

2.2.61.1.5. Substances, mixtures, solutions and articles classified in Class 6.1 are listed in table A of Chapter 3.2. The assignment of substances, mixtures and solutions not mentioned by name in table A of Chapter 3.2 to the relevant entry of 2.2.61.3 and to the relevant packing group in accordance with the requirements of Chapter 2.1, shall be made according to the following criteria in 2.2.61.1.6 to 2.2.61.1.11.

2.2.61.1.6. To assess the degree of toxicity, account shall be taken of human experience of instances of accidental poisoning, as well as special properties possessed by any individual substances: liquid state, high volatility, any special likelihood of cutaneous absorption, and special biological effects.

2.2.61.1.7. In the absence of observations on humans, the degree of toxicity shall be assessed using the available data from animal experiments in accordance with the table below:

	Packing group	Oral toxicity LD_{50} (mg/kg)	Dermal toxicity LD_{50} (mg/kg)	Toxicity on inhalation of dusts and mists LC_{50} (mg/l)
Highly toxic	I	≤ 5	≤ 40	≤ 0,5
Toxic	II	> 5-50	> 40-200	> 0,5-2
Slightly toxic	III (1)	solids: > 50-200 solids: > 50-500	> 200-1 000	> 2-10

(1) Tear gas substances shall be included in packing group II even if date concerning their toxicity correspond to packing group III criteria.

2.2.61.1.7.1. Where a substance exhibits different degrees of toxicity for two or more kinds of exposure, it shall be classified under the highest such degree of toxicity.

2.2.61.1.7.2. Substances meeting the criteria of Class 8 and with an inhalation toxicity of dusts and mists (LC_{50}) leading to packing group I shall only be accepted for an allocation to Class 6.1 if the toxicity through oral ingestion or dermal contact is at least in the range of packing groups I or II. Otherwise an assignment to Class 8 shall be made if appropriate(see footnote (6) in 2.2.8.1.4).

2.2.61.1.7.3. The criteria for inhalation toxicity of dusts and mists are based on LC_{50} data relating to 1-hour exposure, and where such information is available it shall be used. However, where only LC_{50} data relating to 4-hour exposure are available, such figures can be multiplied by four and the product substituted in the above criteria, i.e. LC_{50} value multiplied by four (4 hour) is considered the equivalent of LC_{50} (1 hour).

Inhalation toxicity of vapours

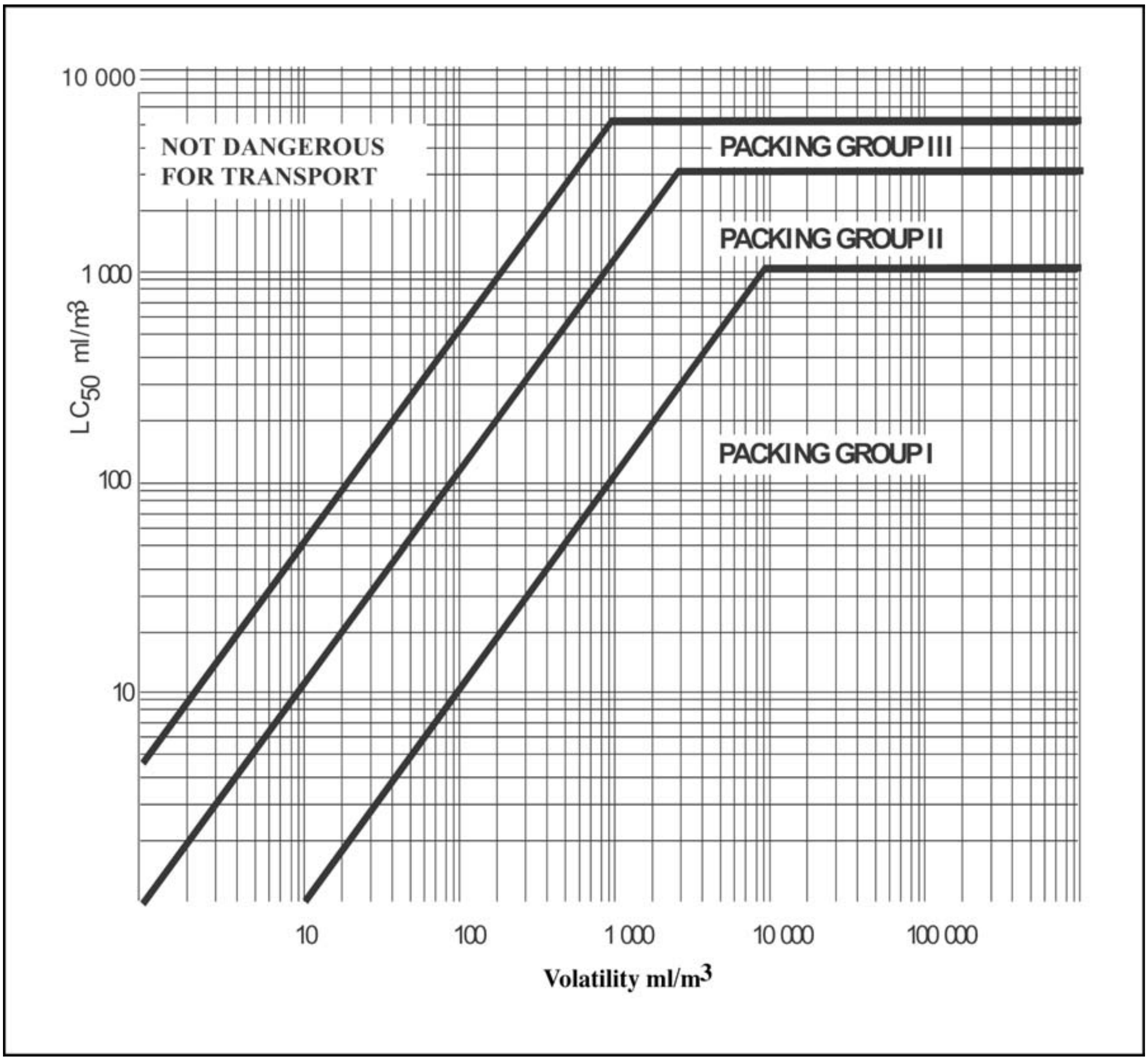
2.2.61.1.8. Liquids giving off toxic vapours shall be classified into the following groups where 'V' is the saturated vapour concentration (volatility) (in ml/m^3 of air) at 20 °C and standard atmospheric pressure:

	Packing group	
Highly toxic	I	Where V ≥ 10 LC_{50} and LC_{50} ≤ 1 000 ml/m^3
Toxic	II	Where V ≥ LC_{50} and LC_{50} ≤ 3 000 ml/m^3 and the criteria for packing group I are not met
Slightly toxic	III	Where V ≥ 1/5 LC_{50} and LC_{50} ≤ 5 000 ml/m^3 and the criteria for packing groups I and II are not met

These criteria for inhalation toxicity of vapours are based on LC_{50} data relating to 1-hour exposure, and where such information is available, it shall be used.

However, where only LC_{50} data relating to 4-hour exposure to the vapours are available, such figures can be multiplied by two and the product substituted in the above criteria, i.e. LC_{50} (4 hour) × 2 is considered the equivalent of LC_{50} (1 hour).

Group borderlines inhalation toxicity of vapours



In this figure, the criteria are expressed in graphical form, as an aid to easy classification. However, due to approximations inherent in the use of graphs, substances falling on or near group borderlines shall be checked using numerical criteria.

Mixtures of liquids

2.2.61.1.9. Mixtures of liquids which are toxic on inhalation shall be assigned to packing groups according to the following criteria:

2.2.61.1.9.1. If LC_{50} is known for each of the toxic substances constituting the mixture, the packing group may be determined as follows:

(a) calculation of the LC_{50} of the mixture:

$$LC_{50}\ (mixture) = \frac{1}{\sum_{i=1}^{n} \frac{f_i}{LC_{50i}}}$$

where f_i = molar fraction of constituent i of the mixture.

LC_{50i} = average lethal concentration of constituent i in ml/m^3.

(b) calculation of volatility of each mixture constituent:

$$V_i = P_i \times \frac{10^6}{101{,}3}\ ml/m^3$$

where P_i = partial pressure of constituent i in kPa at 20 °C and at standard atmospheric pressure.

(c) calculation of the ratio of volatility to LC_{50}:

$$R = \sum_{i=1}^{N} \left(\frac{V_i}{LC_{50i}} \right)$$

(d) the values calculated for LC_{50} (mixture) and R are then used to determine the packing group of the mixture:

Packing group I	$R \geq 10$ and LC_{50} (mixture) $\leq$ 1 000 ml/m^3;
Packing group II	$R \geq 1$ and LC_{50} (mixture) $\leq$ 3 000 ml/m^3, if the mixture does not meet the criteria for packing group I
Packing group III	$R \geq 1/5$ and LC_{50} (mixture) $\leq$ 5 000 ml/m^3, if the mixture does not meet the criteria of packing groups I or II.

2.2.61.1.9.2. In the absence of LC_{50} data on the toxic constituent substances, the mixture may be assigned to a group based on the following simplified threshold toxicity tests. When these threshold tests are used, the most restrictive group shall be determined and used for carrying the mixture.

2.2.61.1.9.3. A mixture is assigned to packing group I only if it meets both of the following criteria:

(a) A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 1 000 ml/m^3 vaporized mixture in air. Ten albino rats (5 male and 5 female) are exposed to the test atmosphere for 1 hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 1 000 ml/m^3;

(b) A sample of vapour in equilibrium with the liquid mixture is diluted with 9 equal volumes of air to form a test atmosphere. Ten albino rats (5 male and 5 female) are exposed to the test atmosphere for 1 hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than 10 times the mixture LC_{50}.

2.2.61.1.9.4. A mixture is assigned to packing group II only if it meets both of the following criteria, and does not meet the criteria for packing group I:

(a) A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 3 000 ml/m^3 vaporized mixture in air. Ten albino rats (5 male and 5 female) are exposed to the test atmosphere for 1 hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 3 000 ml/m^3;

(b) A sample of the vapour in equilibrium with the liquid mixture is used to form a test atmosphere. Ten albino rats (5 male and 5 female) are exposed to the test atmosphere for 1 hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than the mixture LC_{50}.

2.2.61.1.9.5. A mixture is assigned to packing group III only if it meets both of the following criteria, and does not meet the criteria for packing groups I or II:

(a) A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 5 000 ml/m^3 vaporized mixture in air. Ten albino rats (5 male and 5 female) are exposed to the test atmosphere for 1 hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 5 000 ml/m^3;

(b) The vapour concentration (volatility) of the liquid mixture is measured and if the vapour concentration is equal to or greater than 1 000 ml/m^3, the mixture is presumed to have a volatility equal to or greater than 1/5 the mixture LC_{50}.

Methods for determining oral and dermal toxicity of mixtures

2.2.61.1.10. When classifying and assigning the appropriate packing group to mixtures in Class 6.1 in accordance with the oral and dermal toxicity criteria (see 2.2.61.1.3), it is necessary to determine the acute LD_{50} of the mixture.

2.2.61.1.10.1. If a mixture contains only one active substance, and the LD_{50} of that constituent is known, in the absence of reliable acute oral and dermal toxicity data on the actual mixture to be carried, the oral or dermal LD_{50} may be obtained by the following method:

$$LD_{50} \text{ value of preparation} = \frac{LD_{50} \text{ value of active substance x } 100}{\text{percentage of active substance by mass}}$$

2.2.61.1.10.2. If a mixture contains more than one active constituent, there are three possible approaches that may be used to determine the oral or dermal LD_{50} of the mixture. The preferred method is to obtain reliable acute oral and dermal toxicity data on the actual mixture to be carried. If reliable, accurate data is not available, then either of the following methods may be performed:

(a) Classify the formulation according to the most hazardous constituent of the mixture as if that constituent were present in the same concentration as the total concentration of all active constituents; or

(b) Apply the formula:

$$\frac{C_A}{T_A} + \frac{C_B}{T_B} + \ldots + \frac{C_Z}{T_Z} = \frac{100}{T_M}$$

where:

C = the percentage concentration of constituent A, B, ... Z in the mixture

T = the oral LD_{50} values of constituent A, B, ... Z

T_M = the oral LD_{50} value of the mixture.

NOTE: This formula can also be used for dermal toxicities provided that this information is available for all constituents. The use of this formula does not take into account any potentiation or protective phenomena.

Classification of pesticides

2.2.61.1.11. All active pesticide substances and their preparations for which the LC_{50} and/or LD_{50} values are known and which are classified in Class 6.1 shall be classified under appropriate packing groups in accordance with the criteria given in 2.2.61.1.6 to 2.2.61.1.9. Substances and preparations which are characterized by subsidiary risks shall be classified according to the precedence of hazard table in 2.1.3.9 with the assignment of appropriate packing groups.

2.2.61.1.11.1. If the oral or dermal LD_{50} value for a pesticide preparation is not known, but the LD_{50} value of its active substance(s) is known, the LD_{50} value for the preparation may be obtained by applying the procedures in 2.2.61.1.10.

NOTE: LD_{50} toxicity data for a number of common pesticides may be obtained from the most current edition of the document 'The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification' available from the International Programme on Chemical Safety, World Health Organisation (WHO), 1211 Geneva 27, Switzerland. While that document may be used as a source of LD_{50} data for pesticides, its classification system shall not be used for purposes of transport classification of, or assignment of packing groups to, pesticides, which shall be in accordance with the requirements of this Directive.

2.2.61.1.11.2. The proper shipping name used in the transport of the pesticide shall be selected on the basis of the active ingredient, of the physical state of the pesticide and any subsidiary risks it may exhibit (see 3.1.2).

2.2.61.1.12. If substances of Class 6.1, as a result of admixtures, come into categories of risk different from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures or solutions shall be listed under the entries to which they belong on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes), see also 2.1.3.

2.2.61.1.13. On the basis of the criteria of 2.2.61.1.4 to 2.2.61.1.10, it may also be determined whether the nature of a solution or mixture mentioned by name or containing a substance mentioned by name is such that the solution or mixture is not subject to the requirements for this Class.

2.2.61.1.14. Substances, solutions and mixtures, with the exception of substances and preparations used as pesticides, which do not meet the criteria of Directives 67/548/EEC ([1]) or 88/379/EEG ([2]) as amended and which are not therefore classified as highly toxic, toxic or harmful according to these directives, as amended, may be considered as substances not belonging to Class 6.1.

2.2.61.2. Substances not accepted for carriage

2.2.61.2.1. Chemically unstable substances of Class 6.1 shall not be accepted for carriage unless the necessary steps have been taken to prevent their dangerous decomposition or polymerization during carriage. To this end, it shall in particular be ensured that receptacles and tanks do not contain any substance(s) likely to cause such a reaction.

2.2.61.2.2. The following substances and mixtures shall not be accepted for carriage:

— Hydrogen cyanides (stabilized or in solutions), other than UN Nos 1051, 1613, 1614 and 3294;

— metal carbonyls, having a flash-point below 23 °C, other than UN Nos 1259 NICKEL CARBONYL and 1994 IRON PENTACARBONYL;

— 2,3,7,8-TETRACHLORODIBENZO-P-DIOXINE (TCDD) in concentrations considered highly toxic in accordance with the criteria in 2.2.61.1.7;

— 2249 DICHLORODIMETHYL ETHER, SYMMETRICAL;

— preparations of phosphides without additives inhibiting the emission of flammable gases.

The following substances shall not be accepted for carriage by rail:

— barium azide, dry or with less than 50 % water or alcohols

— UN 0135 MERCURY FULMINATE, WETTED

([1]) Council of the European Communities Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 196, 16.8.1967, p. 1).

([2]) Council of the European Communities Directive 88/379/EEC of 7 June 1988 on the classification, packaging and labelling of dangerous preparations (OJ L 187, 16.7.1988, p. 14).

2.2.61.3. List of collective entries

Substances without subsidiary risk(s)

Organic	liquid ([a])	**T1**	1583	CHLOROPICRIN MIXTURE, N.O.S.
			1602	DYE, LIQUID, TOXIC, N.O.S., or
			1602	DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.
			1693	TEAR GAS SUBSTANCE, LIQUID or SOLID, N.O.S.
			1851	MEDICINE, LIQUID, TOXIC, N.O.S.
			2206	ISOCYANATES, TOXIC, N.O.S. or
			2206	ISOCYANATE SOLUTION, TOXIC, N.O.S.
			3140	ALKALOIDS, LIQUID, N.O.S. or
			3140	ALKALOID SALTS, LIQUID, N.O.S.
			3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.
			3144	NICOTINE COMPOUND, LIQUID, N.O.S. or
			3144	NICOTINE PREPARATION, LIQUID, N.O.S.
			3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.
			3276	NITRILES, TOXIC, N.O.S
			3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., liquid
			2810	TOXIC LIQUID, ORGANIC, N.O.S.
	solid ([a]), ([b])	**T2**	1544	ALKALOIDS, SOLID, N.O.S. or
			1544	ALKALOID SALTS, SOLID, N.O.S.
			1601	DISINFECTANT, SOLID, TOXIC, N.O.S.
			1655	NICOTINE COMPOUND, SOLID, N.O.S., or
			1655	NICOTINE PREPARATION, SOLID, N.O.S.
			1693	TEAR GAS SUBSTANCE, LIQUID or SOLID, N.O.S.
			3143	DYE, SOLID, TOXIC, N.O.S. or
			3143	DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.
			3172	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.
			3249	MEDICINE, SOLID, TOXIC, N.O.S.
			3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., solid
			2811	TOXIC SOLID, ORGANIC, N.O.S.
Organometallic ([c]), ([d])		**T3**	2026	PHENYLMERCURIC COMPOUND, N.O.S.
			2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.
			3146	ORGANOTIN COMPOUND, SOLID, N.O.S.
			3280	ORGANOARSENIC COMPOUND, N.O.S., liquid or
			3280	ORGANOARSENIC COMPOUND, N.O.S., solid
			3281	METAL CARBONYLS, N.O.S., liquid or
			3281	METAL CARBONYLS, N.O.S., solid
			3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., liquid or
			3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., solid
Inorganic	liquid ([e])	**T4**	1556	ARSENIC COMPOUND, LIQUID, N.O.S., inorganic including: Arsenates, n.o.s., Arsenites, n.o.s.; and Arsenic sulphides, n.o.s.
			1935	CYANIDE SOLUTION, N.O.S.
			2024	MERCURY COMPOUND, LIQUID, N.O.S.
			3141	ANTIMONY COMPOUND, INORGANIC, LIQUID, N.O.S.
			3287	TOXIC LIQUID, INORGANIC, N.O.S.
	solid ([f]), ([g])	**T5**	1549	ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S
			1557	ARSENIC COMPOUND, SOLID, N.O.S., including: Arsenates, n.o.s.; Arsenites, n.o.s.; and Arsenic sulphides, n.o.s.
			1564	BARIUM COMPOUND, N.O.S.
			1566	BERYLLIUM COMPOUND, N.O.S.
			1588	CYANIDES, INORGANIC, SOLID, N.O.S.
			1707	THALLIUM COMPOUND, N.O.S.
			2025	MERCURY COMPOUND, SOLID, N.O.S.
			2291	LEAD COMPOUND, SOLUBLE, N.O.S.
			2570	CADMIUM COMPOUND
			2630	SELENATES or
			2630	SELENITES
			2856	FLUOROSILICATES, N.O.S.
			3283	SELENIUM COMPOUND, N.O.S.
			3284	TELLURIUM COMPOUND, N.O.S.
			3285	VANADIUM COMPOUND, N.O.S.
			3288	TOXIC SOLID, INORGANIC, N.O.S.

(CONTINUED)

Toxic substances without subsidiary risk(s) (cont'd)

Pesticides	liquid	T6	2992	CARBAMATE PESTICIDE, LIQUID, TOXIC
			2994	ARSENICAL PESTICIDE, LIQUID, TOXIC
			2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC
			2998	TRIAZINE PESTICIDE, LIQUID, TOXIC
			3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC
			3010	COPPER BASED PESTICIDE, LIQUID, TOXIC
			3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC
			3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC
			3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC
			3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC
			3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC
			3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC
			3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC
			3352	PYRETHROID PESTICIDE, LIQUID, TOXIC
			2902	PESTICIDE, LIQUID, TOXIC, N.O.S.
	solid	T7	2757	CARBAMATE PESTICIDE, SOLID, TOXIC
			2759	ARSENICAL PESTICIDE, SOLID, TOXIC
			2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC
			2763	TRIAZINE PESTICIDE, SOLID, TOXIC
			2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC
			2775	COPPER BASED PESTICIDE, SOLID, TOXIC
			2777	MERCURY BASED PESTICIDE, SOLID, TOXIC
			2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC
			2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC
			2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC
			2786	ORGANOTIN PESTICIDE, SOLID, TOXIC
			3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC
			3048	ALUMINIUM PHOSPHIDE PESTICIDE
			3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC
			3349	PYRETHROID PESTICIDE, SOLID, TOXIC
			2588	PESTICIDE, SOLID, TOXIC, N.O.S.
Samples		T8	3315	CHEMICAL SAMPLE, TOXIC liquid or solid
Other toxic substances ([h])		T9	3243	SOLIDS CONTAINING TOXIC LIQUID, N.O.S.

Toxic substances with subsidiary risk(s)

Flammable TF	liquid ([i]), ([j])	TF1	3071	MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or
			3071	MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S.
			3080	ISOCYANATES, TOXIC, FLAMMABLE, N.O.S. or
			3080	ISOCYANATE SOLUTION, TOXIC, FLAMMABLE, N.O.S.
			3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.
			3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.
			2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
	Pesticides (flash point not less than 23 °C)	TF2	2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE
			2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S.
	solid	TF3	1700	TEAR GAS CANDLES
			2930	TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.
Solid, self-heating ([c]) TS			3124	TOXIC SOLID, SELF-HEATING, N.O.S.

(CONTINUED)

Toxic substances with subsidiary risk(s) (cont'd)

Subsidiary risk		State	Code	UN No.	Name
Waterreactive (d) TW		liquid	TW1	3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.
		solid (k)	TW2	3125	TOXIC SOLID, WATER-REACTIVE, N.O.S.
Oxidizing (l) TO		liquid	TO1	3122	TOXIC LIQUID, OXIDIZING, N.O.S.
		solid	TO2	3086	TOXIC SOLID, OXIDIZING, N.O.S.
Corrosive (m) TC	organic	liquid	TC1	3277 2927	CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.
		solid	TC2	2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.
	inorganic	liquid	TC3	3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.
		solid	TC4	3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.
Flammable, corrosive TFC				2742	CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S. (no other collective entry with this classification code available; where necessary, assignment to a collective entry with a classification code to be determined in accordance with the precedence of hazard table in 2.1.3.9).

(a) Substances and preparations containing alkaloids or nicotine used as pesticides shall be classified under UN No. 2588 PESTICIDES, SOLID, TOXIC, N.O.S., UN No. 2902 PESTICIDES, LIQUID, TOXIC, N.O.S. or UN No. 2903 PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S.

(b) Active substances and triturations or mixtures of substances intended for laboratories and experiments and for the manufacture of pharmaceutical products with other substances shall be classified according to their toxicity (see 2.2.61.1.7 to 2.2.61.1.11).

(c) Self-heating substances, slightly toxic and spontaneously combustible, and organometallic compounds, are substances of Class 4.2.

(d) Slightly toxic substances which, in contact with water, emit flammable gases, and organometallic compounds which, in contact with water, emit flammable gases, are substances of Class 4.3.

(e) Ferricyanides, ferrocyanides, alkaline thiocyanates and ammonium thiocyanates are not subject to the requirements of this Directive.

(f) Lead salts and lead pigments which, when mixed in a ratio of 1:1, 000 with 0,07M hydrochloric acid and stirred for one hour at a temperature of 23°C ± 2°C, exhibit a solubility of 5% or less, are not subject to the requirements of this Directive.

(g) Mixtures of solids which are not subject to the requirements of this Directive, and toxic liquids, may be carried under UN No. 3243 without first applying the classification criteria of Class 6.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging, wagon or container is closed. Each packaging shall correspond to a design type that has passed a leakproofness test at the packing group II level. This entry shall not be used for solids containing a packing group I liquid.

(h) Highly toxic or toxic, flammable liquids having a flash-point below 23°C excluding substances which are highly toxic on inhalation, i.e. UN Nos. 1051, 1092, 1098, 1143, 1163, 1182, 1185, 1238, 1239, 1244, 1251, 1259, 1613, 1614, 1695, 1994, 2334, 2382, 2407, 2438, 2480, 2482, 2484, 2485, 2606, 2929, 3279 and 3294 are substances of Class 3.

(i) Flammable liquids, slightly toxic, with the exception of substances and preparations used as pesticides, having a flash-point between 23°C and 61°C inclusive, are substances of Class 3.

(j) Metal phosphides assigned to UN Nos. 1360, 1397, 1432, 1714, 2011 and 2013 are substances of Class 4.3.

(k) Oxidizing substances, slightly toxic, are substances of Class 5.1.

(l) Substances slightly toxic and slightly corrosive, are substances of Class 8.

(m) MERCURY FULMINATE WETTED with not less than 20% water, or mixture of alcohol and water, by mass, is a substance of Class 1, UN No. 0135 and shall not be accepted for carriage by rail (see 2.2.61.2.2).

2.2.62 *Class 6.2 Infectious substances*

2.2.62.1. Criteria

2.2.62.1.1. The heading of Class 6.2 covers infectious substances. Infectious substances are those substances known or reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsia, parasites, fungi) or recombinant micro-organisms (hybrid or mutant), that are known or reasonably expected to cause infectious disease in animals or humans.

For the purposes of this Class, viruses, micro-organisms as well as articles contaminated with these shall be considered as substances of this Class.

NOTES:

1. However, they are not subject to the requirements applicable to this Class if they are unlikely to cause human or animal disease.

2. Infectious substances are subject to the requirements applicable to this Class only if they are capable of spreading disease to humans or animals when exposure to them occurs.

3. Genetically modified micro-organisms and organisms, biological products, diagnostic specimens and infected live animals shall be assigned to this Class if they meet the conditions for this Class.

4. Toxins from plant, animal or bacterial sources which do not contain any infectious substances or organisms or which are not contained in them are substances of Class 6.1, UN No 3172.

2.2.62.1.2. Substances of Class 6.2 are subdivided as follows:

I 1: Infectious substances affecting humans

I 2: Infectious substances affecting animals only

I 3: Clinical waste

Definitions and classification

2.2.62.1.3. Infectious substances shall be classified in Class 6.2 and assigned to UN Nos 2814 or 2900, as appropriate, on the basis of their allocation to one of three risk groups based on criteria developed by the World Health Organization (WHO) and published in the WHO 'Laboratory Biosafety Manual, second edition (1993)'. A risk group is characterized by the pathogenicity of the organism, the mode and relative ease of transmission, the degree of risk to both an individual and a community, and the reversibility of the disease through the availability of known and effective preventive agents and treatment.

The criteria for each risk group according to the level of risk are as follows:

(a) Risk group 4: a pathogen that usually causes serious human or animal disease and that can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventive measures are not usually available (i.e., high individual and community risk).

(b) Risk group 3: a pathogen that usually causes serious human or animal disease but does not ordinarily spread from one infected individual to another, and for which effective treatment and preventive measures are available (i.e. high individual risk and low community risk).

(c) Risk group 2: a pathogen that can cause human or animal disease but is unlikely to be a serious hazard, and, while capable of causing serious infection on exposure, for which effective treatment and preventive measures are available and the risk of spread of infection is limited (i.e. moderate individual risk and low community risk).

NOTE: Risk group 1 includes micro-organisms that are unlikely to cause human or animal disease (i.e. no, or very low, individual or community risk). Substances containing only such micro-organisms are not considered infectious substances for the purposes of these requirements.

2.2.62.1.4. Infectious substances affecting animals only (group I2 in 2.2.62.1.2) and of risk group 2 are assigned to packing group II.

2.2.62.1.5. *Biological products* are those products derived from living organisms, that are manufactured and distributed in accordance with the requirements of national governmental authorities which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigational purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines and diagnostic products.

For the purposes of this Directive, biological products are divided into the following groups:

(a) Those which contain pathogens in risk group 1; those which contain pathogens under such conditions that their ability to produce disease is very low to none; and those known not to contain pathogens. Substances in this group are not considered infectious substances for the purposes of this Directive;

(b) Those manufactured and packaged in accordance with the requirements of national governmental health authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals. Substances in this group are not subject to the requirements applicable to Class 6.2;

(c) Those known or reasonably expected to contain pathogens in risk groups 2, 3, or 4 and which do not meet the criteria of (b) above. Substances in this group shall be classified in Class 6.2 under UN Nos 2814 or 2900, as appropriate.

NOTE: Some licensed biological products may present a biohazard in certain parts of the world only. In that case competent authorities may require these biological products to comply with the requirements for infectious substances or may impose other restrictions.

2.2.62.1.6. *Diagnostic specimens* are any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids being transported for purposes of diagnosis or research, but excluding live infected animals.

For the purposes of RID, diagnostic specimens are divided into the following groups:

(a) Those known or reasonably expected to contain pathogens in risk groups 2, 3 or 4 and those where a relatively low probability exists that pathogens of risk group 4 are present. Such substances shall be classified in Class 6.2 under UN Nos 2814 or 2900, as appropriate. Specimens carried for the purposes of initial or confirmatory testing for the presence of pathogens fall within this group;

(b) Those where a relatively low probability exists that pathogens of risk groups 2 or 3 are present. Such substances shall be classified in 6.2 under UN No 2814 or 2900, as appropriate. Specimens carried for the purpose of initial diagnosis for other than the presence of pathogens or specimens arried for routine screening fall within this group;

(c) Those known not to contain pathogens. Such substances are not considered as substances of Class 6.2.

2.2.62.1.7. *Genetically modified micro-organisms and organisms* (1) are micro-organisms and organisms in which the genetic material has been deliberately altered by technical methods or by means that cannot occur naturally in nature.

For the purposes of RID, genetically modified micro-organisms and organisms are divided into the following groups:

(a) Genetically modified micro-organisms which meet the definition of an infectious substance given in 2.2.62.1.1 shall be classified in Class 6.2 and assigned to UN Nos 2814 or 2900;

(b) Genetically modified organisms, which are known or suspected to be dangerous to humans, animals or the environment, shall be carried in accordance with conditions specified by the competent authority of the country of origin;

(c) Animals which contain or are contaminated with genetically modified micro-organisms and organisms that meet the definition of an infectious substance shall be carried in accordance with conditions specified by the competent authority of the country of origin;

(d) Except when authorized for unconditional use by the Governments of the countries of origin, transit and destination, genetically modified micro-organisms which do not meet the definition of infectious substances but which are capable of altering animals, plants or microbiological substances in a way not normally the result of natural reproduction shall be classified in Class 9 and assigned to UN No 3245.

NOTE: Genetically modified micro-organisms which are infectious within the meaning of this Class may not be assigned to UN No 3291.

2.2.62.1.8. Diagnostic specimens referred to in 2.2.62.1.6 (b) need not meet the requirements for infectious substances when the following conditions are met:

(a) — The primary receptacle(s) do not contain more than 100 ml;

— The outer packaging does not contain more than 500 ml;

— The primary receptacle(s) are leakproof; and

(1) See also Directive 90/219/EEC, Official Journal of the European Communities OJ L 117, 8.5.1990, p. 1.

— The packaging includes:

(i) an inner packaging comprising:

— watertight primary receptacle(s);

— a watertight secondary packaging;

— absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if several primary receptacles are placed in a single secondary packaging, they shall be individually wrapped so as to prevent contact between them;

(ii) an outer packaging of adequate strength for its capacity, mass and intended use, and with minimum external dimensions of 100 mm, or

(b) the packagings comply with standard EN 829:1996.

2.2.62.1.9. *Wastes* are wastes derived from the medical treatment of animals or humans or from bioresearch where there is a relatively low probability that infectious substances are present. They shall be assigned to UN No 3291. Wastes containing infectious substances which can be specified shall be assigned to UN Nos 2814 or 2900 according to their degree of danger (see 2.2.62.1.3). Decontaminated wastes which previously contained infectious substances are considered non-dangerous unless the criteria of another class are met.

2.2.62.1.10. Clinical wastes assigned to UN No 3291 are assigned to packing group II.

2.2.62.1.11. For the carriage of substances of this Class, the maintenance of a specified temperature may be necessary.

2.2.62.2. Substances not accepted for carriage

Live vertebrate or invertebrate animals shall not be used to carry an infectious agent unless the agent cannot be carried by any other means. Such animals shall be packed, marked, indicated, and carried in accordance with the relevant regulations governing the carriage of animals [1].

2.2.62.3. List of collective entries

Effects on humans	I1	2814	INFECTIOUS SUBSTANCE, AFFECTING HUMANS
Effects on animals only	I2	2900	INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only
Clinical waste	I3	3291	CLINICAL WASTE, UNSPECIFIED, N.O.S. NOTE: The names (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S. may be used as alternative designations for CLINICAL WASTE, UNSPECIFIED, N.O.S. for carriage prior to or following maritime or air carriage.

2.2.7. *Class 7 Radioactive material*

2.2.7.1. Definition of Class 7

2.2.7.1.1. *Radioactive material* means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in 2.2.7.7.2.1-2.2.7.7.2.6.

2.2.7.1.2. The following radioactive materials are not included in Class 7 for the purposes of this Directive:

(a) Radioactive material that is an integral part of the means of transport;

(b) Radioactive material moved within an establishment which is subject to appropriate safety regulations in force in the establishment and where the movement does not involve public roads or railways;

[1] Such regulations are contained in, e.g. Directive 91/628/EEC (Official Journal of the European Communities OJ L 340, 11.12.1991, p. 17) and in the Recommendations of the Council of Europe (Ministerial Committee) on the carriage of certain animal species.

(c) Radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment;

(d) Radioactive material in consumer products which have received regulatory approval, following their sale to the end user;

(e) Natural material and ores containing naturally occurring radionuclides which are not intended to be processed for use of these radionuclides provided the activity concentration of the material does not exceed 10 times the values specified in 2.2.7.7.2.

2.2.7.2. Definitions

A_1 and $_2$

A_1 means the activity value of special form radioactive material which is listed in Table 2.2.7.7.2.1 or derived in 2.2.7.7.2 and is used to determine the activity limits for the equirements of this Directive.

A_2 means the activity value of radioactive material, other than special form radioactive material, which is listed in Table 2.2.7.7.2.1 or derived in 2.2.7.7.2 and is used to determine the activity limits for the requirements of this Directive.

Approval

Multilateral approval means approval by the relevant competent authority both of the country of origin of the design or shipment and of each country through or into which the consignment is to be carried.

Unilateral approval means an approval of a design which is required to be given by the competent authority of the country of origin of the design only. If the country of origin is not a Member State, the approval shall require validation by the competent authority of the first Member State reached by the consignment (see 6.4.22.6).

Confinement system means the assembly of fissile material and packaging components specified by the designer and agreed to by the competent authority as intended to preserve criticality safety.

Containment system means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during carriage.

Contamination means the presence of a radioactive substance on a surface in quantities in excess of 0,4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 0,04 Bq/cm^2 for all other alpha emitters.

Non-fixed contamination means contamination that can be removed from a surface during routine conditions of carriage.

Fixed contamination means contamination other than non-fixed contamination.

Criticality safety index (CSI) assigned to a package, overpack or container containing fissile material means a number which is used to provide control over the accumulation of packages, overpacks or containers containing fissile material.

Design means the description of special form radioactive material, low dispersible radioactive material, package or packaging which enables such an item to be fully identified. The description may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation.

Exclusive use means the sole use, by a single consignor, of a wagon or of a large container, in respect of which all initial, intermediate and final loading and unloading is carried out in accordance with the directions of the consignor or consignee.

Fissile material means uranium-33, uranium-235, plutonium-239, plutonium-241, or any combination of these radionuclides. Excepted from this definition is:

(a) Natural uranium or depleted uranium which is unirradiated, and

(b) Natural uranium or depleted uranium which has been irradiated in thermal reactors only.

Large container means a container which is not a small container according to the definitions of this sub-section.

Low dispersible radioactive material means either a solid radioactive material or a solid radioactive material in a sealed capsule, that has limited dispersibility and is not in powder form.

NOTE: Low dispersible radioactive material may be carried by air in Type B(U) or B(M) packages in quantities as authorised for the package design as specified in the certificate of approval. This definition is included here since such packages carrying low dispersible radioactive material may also be carried by rail.

Low specific activity (LSA) material, see 2.2.7.3.

Low toxicity alpha emitters are: natural uranium; depleted uranium; natural thorium; uranium-235 or uranium-238; thorium-232; thorium-228 and thorium-230 when contained in ores or physical and chemical concentrates; or alpha emitters with a half-life of less than 10 days.

Maximum normal operating pressure means the maximum pressure above atmospheric pressure at mean sea-level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions in the absence of venting, external cooling by an ancillary system, or operational controls during carriage.

Package in the case of radioactive material means the packaging with its radioactive contents as presented for carriage. The types of packages covered by this Directive, which are subject to the activity limits and material restrictions of 2.2.7.7 and meet the corresponding requirements, are:

(a) Excepted package;

(b) Industrial package Type 1 (Type IP-1);

(c) Industrial package Type 2 (Type IP-2);

(d) Industrial package Type 3 (Type IP-3);

(e) Type A package;

(f) Type B(U) package;

(g) Type B(M) package;

(h) Type C package.

Packages containing fissile material or uranium hexafluoride are subject to additional requirements (see 2.2.7.7.1.7 and 2.2.7.7.1.8).

NOTE: For 'packages' for other dangerous goods see definitions under 1.2.1.

Packaging in the case of radioactive material means the assembly of components necessary to enclose the radioactive contents completely. It may, in particular, consist of one or more receptacles, absorbent materials, spacing structures, radiation shielding and service equipment for filling, emptying, venting and pressure relief; devices for cooling, absorbing mechanical shocks, handling and tie-down, thermal insulation; and service devices integral to the package. The packaging may be a box, drum or similar receptacle, or may also be a container, tank or intermediate bulk container.

NOTE: For 'packagings' for other dangerous goods see definitions under 1.2.1

Radiation level means the corresponding dose rate expressed in millisieverts per hour.

Radioactive contents mean the radioactive material together with any contaminated or activated solids, liquids, and gases within the packaging.

Shipment means the specific movement of a consignment from origin to destination.

Small container means a container which has either any overall outer dimension less than 1,5 m, or an internal volume of not more than 3 m^3.

Special form radioactive material, see 2.2.7.4.1.

Specific activity of a radionuclide means the activity per unit mass of that nuclide. The specific activity of a material shall mean the activity per unit mass or volume of the material in which the radionuclides are essentially uniformly distributed.

Surface contaminated object (SCO), see 2.2.7.5.

Transport index (TI) assigned to a package, overpack or container, or to unpackaged LSA-I or SCO-I, means a number which is used to provide control over radiation exposure.

Unirradiated thorium means thorium containing not more than 10^{-7} g of uranium-233 per gram of thorium-232.

Unirradiated uranium means uranium containing not more than 2×10^3 Bq of plutonium per gram of uranium-235, not more than 9×10^6 Bq of fission products per gram of uranium-235 and not more than 5×10^{-3} g of uranium-236 per gram of uranium-235.

Uranium — natural, depleted, enriched means the following:

Natural uranium means chemically separated uranium containing the naturally occurring distribution of uranium isotopes (approximately 99,28 % uranium-238, and 0,72 % uranium-235 by mass).

Depleted uranium means uranium containing a lesser mass percentage of uranium-235 than in natural uranium.

Enriched uranium means uranium containing a greater mass percentage of uranium-235 than 0,72 %. In all cases, a very small mass percentage of uranium-234 is present.

2.2.7.3. Low specific activity (LSA) material, determination of groups

2.2.7.3.1. Radioactive material which by its nature has a limited specific activity, or radioactive material for which limits of estimated average specific activity apply, is termed low specific activity or LSA material. External shielding materials surrounding the LSA material shall not be considered in determining the estimated average specific activity.

2.2.7.3.2. LSA material shall be in one of three groups:

(a) LSA-I

(i) uranium and thorium ores and concentrates of such ores, and other ores containing naturally occurring radionuclides which are intended to be processed for the use of these radionuclides;

(ii) solid unirradiated natural uranium or depleted uranium or natural thorium or their solid or liquid compounds or mixtures;

(iii) radioactive material for which the A_2 value is unlimited, excluding fissile material in quantities not excepted under 6.4.11.2; or

(iv) other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the values for activity concentration specified in 2.2.7.7.2.1-2.2.7.7.2.6, excluding fissile material in quantities not excepted under 6.4.11.2.

(b) LSA-II

(i) water with tritium concentration up to 0,8 TBq/l; or

(ii) other material in which the activity is distributed throughout and the estimated average specific activity does not exceed 10^{-4} A_2/g for solids and gases, and 10^{-5} A_2/g for liquids.

(c) LSA-III

LSA-III — Solids (e.g. consolidated wastes, activated materials), excluding powders, in which:

(i) the radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.);

(ii) the radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble matrix, so that, even under loss of packaging, the loss of radioactive material per package by leaching when placed in water for seven days would not exceed 0,1 A_2; and

(iii) the estimated average specific activity of the solid, excluding any shielding material, does not exceed 2×10^{-3} A_2/g.

2.2.7.3.3. LSA-III material shall be a solid of such a nature that if the entire contents of a package were subjected to the test specified in 2.2.7.3.4 the activity in the water would not exceed 0,1 A_2.

2.2.7.3.4. LSA-III material shall be tested as follows:

A solid material sample representing the entire contents of the package shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7 day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10 % of the volume of the solid test sample itself. The water shall have an initial pH of 6–8 and a maximum conductivity of 1 mS/m at 20 °C. The total activity of the free volume of water shall be measured following the 7 day immersion of the test sample.

2.2.7.3.5. Demonstration of compliance with the performance standards in 2.2.7.3.4 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.2.7.4. Requirements for special form radioactive material

2.2.7.4.1. *Special form radioactive material* means either:

(a) An indispersible solid radioactive material; or

(b) A sealed capsule containing radioactive material that shall be so manufactured that it can be opened only by destroying the capsule.

Special form radioactive material shall have at least one dimension not less than 5 mm.

2.2.7.4.2. Special form radioactive material shall be of such a nature or shall be so designed that if it is subjected to the tests specified in 2.2.7.4.4 to 2.2.7.4.8, it shall meet the following requirements:

(a) It would not break or shatter under the impact, percussion and bending tests in 2.2.7.4.5(a)(b)(c), 2.2.7.4.6(a) as applicable;

(b) It would not melt or disperse in the applicable heat test in 2.2.7.4.5(d) or 2.2.7.4.6(b) as applicable; and

(c) The activity in the water from the leaching tests specified in 2.2.7.4.7 and 2.2.7.4.8 would not exceed 2 kBq; or alternatively for sealed sources, the leakage rate for the volumetric leakage assessment test specified in ISO 9978:1992 'Radiation Protection — Sealed Radioactive Sources — Leakage Test Methods', would not exceed the applicable acceptance threshold acceptable to the competent authority.

2.2.7.4.3. Demonstration of compliance with the performance standards in 2.2.7.4.2 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.2.7.4.4. Specimens that comprise or simulate special form radioactive material shall be subjected to the impact test, the percussion test, the bending test, and the heat test specified in 2.2.7.4.5 or alternative tests as authorized in 2.2.7.4.6. A different specimen may be used for each of the tests. Following each test, a leaching assessment or volumetric leakage test shall be performed on the specimen by a method no less sensitive than the methods given in 2.2.7.4.7 for indispersible solid material or 2.2.7.4.8 for encapsulated material.

2.2.7.4.5. The relevant test methods are:

(a) Impact test: The specimen shall drop onto the target from a height of 9 m. The target shall be as defined in 6.4.14;

(b) Percussion test: The specimen shall be placed on a sheet of lead which is supported by a smooth solid surface and struck by the flat face of a mild steel bar so as to cause an impact equivalent to that resulting from a free drop of 1,4 kg through 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3,0 ± 0,3) mm. The lead, of hardness number 3,5 to 4,5 on the Vickers scale and not more than 25 mm thick, shall cover an area greater than that covered by the specimen. A fresh surface of lead shall be used for each impact. The bar shall strike the specimen so as to cause maximum damage.

(c) Bending test: The test shall apply only to long, slender sources with both a minimum length of 10 cm and a length to minimum width ratio of not less than 10. The specimen shall be rigidly clamped in a horizontal position so that one half of its length protrudes from the face of the clamp. The orientation of the specimen shall be such that the specimen will suffer maximum damage when its free end is struck by the flat face of a steel bar. The bar shall strike the specimen so as to cause an impact equivalent to that resulting from a free vertical drop of 1,4 kg through 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3,0 ± 0,3) mm.

(d) Heat test: The specimen shall be heated in air to a temperature of 800 °C and held at that temperature for a period of 10 minutes and shall then be allowed to cool.

2.2.7.4.6. Specimens that comprise or simulate radioactive material enclosed in a sealed capsule may be excepted from:

(a) The tests prescribed in 2.2.7.4.5(a) and 2.2.7.4.5(b) provided the mass of the special form radioactive material is less than 200 g and they are alternatively subjected to the Class 4 impact test prescribed in ISO 2919:1980 'Radiation protection Sealed radioactive sources — General requirements Classification'; and

(b) The test prescribed in 2.2.7.4.5(d) provided they are alternatively subjected to the Class 6 temperature test specified in ISO 2919:1980 'Sealed radioactive sources — Classification'.

2.2.7.4.7. For specimens which comprise or simulate indispersible solid material, a leaching assessment shall be performed as follows:

(a) The specimen shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7 day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10 % of the volume of the solid test sample itself. The water shall have an initial pH of 6–8 and a maximum conductivity of 1 mS/m at 20 °C;

(b) The water with specimen shall then be heated to a temperature of (50 ± 5) °C and maintained at this temperature for 4 hours;

(c) The activity of the water shall then be determined;

(d) The specimen shall then be kept for at least 7 days in still air at not less than 30 °C and relative humidity not less than 90 %;

(e) The specimen shall then be immersed in water of the same specification as in (a) above and the water with the specimen heated to (50 ± 5)°C and maintained at this temperature for 4 hours;

(f) The activity of the water shall then be determined.

2.2.7.4.8. For specimens which comprise or simulate radioactive material enclosed in a sealed capsule, either a leaching assessment or a volumetric leakage assessment shall be performed as follows:

(a) The leaching assessment shall consist of the following steps:

(i) the specimen shall be immersed in water at ambient temperature. The water shall have an initial pH of 6—8 with a maximum conductivity of 1 mS/m at 20 °C;

(ii) the water and specimen shall be heated to a temperature of (50 ± 5) °C and maintained at this temperature for 4 hours;

(iii) the activity of the water shall then be determined;

(iv) the specimen shall then be kept for at least 7 days in still air at not less than 30 °C and relative humidity of not less than 90 %;

(v) the process in (i), (ii) and (iii) shall be repeated;

(b) The alternative volumetric leakage assessment shall comprise any of the tests prescribed in ISO 9978:1992 'Radiation Protection — Sealed radioactive sources — Leakage test methods', which are acceptable to the competent authority.

2.2.7.5. Surface contaminated object (SCO), determination of groups

Surface contaminated object (SCO) means a solid object which is not itself radioactive but which has radioactive material distributed on its surfaces. SCO is classified in one of two groups:

(a) SCO-I: A solid object on which:

(i) the non-fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 0,4 Bq/cm^2 for all other alpha emitters; and

(ii) the fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4 x 10^4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 4×10^3 Bq/cm^2 for all other alpha emitters; and

(iii) the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4×10^4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 4×10^3 Bq/cm^2 for all other alpha emitters;

(b) SCO-II: A solid object on which either the fixed or non-fixed contamination on the surface exceeds the applicable limits specified for SCO-I in (a) above and on which:

(i) the non-fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 400 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 40 Bq/cm^2 for all other alpha emitters; and

(ii) the fixed contamination on the accessible surface, averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 8×10^4 Bq/cm^2 for all other alpha emitters; and

(iii) the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 8×10^4 Bq/cm^2 for all other alpha emitters.

2.2.7.6. Determination of transport index (TI) and criticality safety index (CSI)

2.2.7.6.1. Determination of transport index

2.2.7.6.1.1. The transport index (TI) for a package, overpack or container, or for unpackaged LSA-I or SCO-I, shall be the number derived in accordance with the following procedure:

(a) Determine the maximum radiation level in units of millisieverts per hour (mSv/h) at a distance of 1 m from the external surfaces of the package, overpack, container, or unpackaged LSA-I and SCO-I. The value determined shall be multiplied by 100 and the resulting number is the transport index. For uranium and thorium ores and their concentrates, the maximum radiation level at any point 1 m from the external surface of the load may be taken as:

0,4 mSv/h for ores and physical concentrates of uranium and thorium;

0,3 mSv/h for chemical concentrates of thorium;

0,02 mSv/h for chemical concentrates of uranium, other than uranium hexafluoride;

(b) For tanks, containers and unpackaged LSA-I and SCO-I, the value determined in step (a) above shall be multiplied by the appropriate factor from Table 2.2.7.6.1.1;

(c) The value obtained in steps (a) and (b) above shall be rounded up to the first decimal place (e.g. 1.13 becomes 1.2), except that a value of 0,05 or less may be considered as zero.

Table 2.2.7.6.1.1

Multiplication factors for large dimension loads

Size of load ([a])	Multiplication factor
$\leq 1\ m^2$	1
$> 1\ m^2 \leq 5\ m^2$	2
$> 5\ m^2 \leq 20\ m^2$	3
$> 20\ m^2$	10

([a]) Largest cross-sectional area of the load being measured.

2.2.7.6.1.2. The transport index for each overpack, container or wagon shall be determined as either the sum of the TIs of all the packages contained, or by direct measurement of radiation level, except in the case of non-rigid overpacks for which the transport index shall be determined only as the sum of the TIs of all the packages.

2.2.7.6.2. Determination of criticality safety index (CSI)

2.2.7.6.2.1. The criticality safety index (CSI) for packages containing fissile material shall be obtained by dividing the number 50 by the smaller of the two values of N derived in 6.4.11.11 and 6.4.11.12 (i.e. CSI = 50/N). The value of the criticality safety index may be zero, provided that an unlimited number of packages is subcritical (i.e. N is effectively equal to infinity in both cases).

2.2.7.6.2.2. The criticality safety index for each consignment shall be determined as the sum of the CSIs of all the packages contained in that consignment.

2.2.7.7. Activity limits and material restrictions

2.2.7.7.1. Contents limits for packages

2.2.7.7.1.1. General

The quantity of radioactive material in a package shall not exceed the relevant limits for the package type as specified below.

2.2.7.7.1.2. Excepted packages

2.2.7.7.1.2.1. For radioactive material other than articles manufactured of natural uranium, depleted uranium or natural thorium, an excepted package shall not contain activities greater than the following:

(a) Where the radioactive material is enclosed in or is included as a component part of an instrument or other manufactured article, such as a clock or electronic apparatus, the limits specified in columns 2 and 3 of Table 2.2.7.7.1.2.1 for each individual item and each package, respectively; and

(b) Where the radioactive material is not so enclosed in or is not included as a component of an instrument or other manufactured article, the package limits specified in column 4 of Table 2.2.7.7.1.2.1.

Table 2.2.7.7.1.2.1

Activity limits for excepted packages

Physical state of contents	Instruments or article		Materials
	Item limits ([a])	Package limits ([a])	
Solids			
special form	10^{-2} A_1	A_1	10^{-3} A_1
other form	10^{-2} A_2	A_2	10^{-3} A_2
Liquids	10^{-3} A_2	10^{-1} A_2	10^{-4} A_2
Gasses			
Tritium	2×10^{-2} A_2	2×10^{-1} A_2	2×10^{-1} A_2
special form	10^{-3} A_1	10^{-2} A_1	10^{-3} A_1
other forms	10^{-3} A_2	10^{-2} A_2	10^{-3} A_2

([a]) For mixtures of radionuclides, see 2.2.7.7.2.4 to 2.2.7.7.2.6.

2.2.7.7.1.2.2. For articles manufactured of natural uranium, depleted uranium or natural thorium, an excepted package may contain any quantity of such material provided that the outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

2.2.7.7.1.3. Industrial packages

The radioactive contents in a single package of LSA material or in a single package of SCO shall be so restricted that the radiation level specified in 4.1.9.2.1 shall not be exceeded, and the activity in a single package shall also be so restricted that the activity limits for a wagon specified in 7.5.11, CW33 (2) shall not be exceeded.

2.2.7.7.1.4. Type A packages

2.2.7.7.1.4.1. Type A packages shall not contain activities greater than the following:

(a) For special form radioactive material — A_1; or

(b) For all other radioactive material — A_2.

2.2.7.7.1.4.2. For mixtures of radionuclides whose identities and respective activities are known, the following condition shall apply to the radioactive contents of a Type A package:

$$\sum_i \frac{B(i)}{A_1(i)} + \sum_j \frac{C(j)}{A_2(j)} \leq 1$$

where

B(i) is the activity of radionuclide i as special form radioactive material and A_1(i) is the A_1 value for radionuclide i; and

C(j) is the activity of radionuclide j as other than special form radioactive material and A_2 (j) is the A_2 value for radionuclide j.

2.2.7.7.1.5. Type B(U) and Type B(M) packages

2.2.7.7.1.5.1. Type B(U) and Type B(M) packages, shall not contain:

(a) Activities greater than those authorized for the package design;

(b) Radionuclides different from those authorized for the package design; or

(c) Contents in a form, or a physical or chemical state different from those authorized for the package design;

as specified in their certificates of approval.

2.2.7.7.1.6. **Type C packages**

NOTE: Type C packages containing radioactive material in quantities exceeding either 3 000 A_1 or 100 000 A_2 whichever is the lower for special form radioactive material, or exceeding 3 000 A_2 for all other radioactive material, may be carried by air. Whilst Type C packages are not required for the carriage by rail of radioactive material in such quantities (Type B(U) or Type B(M) packages suffice), the following requirements are presented since such packages may also be carried by rail.

Type C packages shall not contain:

(a) Activities greater than those authorized for the package design;

(b) Radionuclides different from those authorized for the package design; or

(c) Contents in a form, or physical or chemical state different from those authorized for the package design;

as specified in their certificates of approval.

2.2.7.7.1.7. Packages containing fissile material

Packages containing fissile material shall not contain:

(a) A mass of fissile material different from that authorized for the package design;

(b) Any radionuclide or fissile material different from those authorized for the package design; or

(c) Contents in a form or physical or chemical state, or in a spatial arrangement, different from those authorized for the package design;

as specified in their certificates of approval where appropriate.

2.2.7.7.1.8. Packages containing uranium hexafluoride

The mass of uranium hexafluoride in a package shall not exceed a value that would lead to an ullage smaller than 5 % at the maximum temperature of the package as specified for the plant systems where the package shall be used. The uranium hexafluoride shall be in solid form and the internal pressure of the package shall be below atmospheric pressure when presented for carriage.

2.2.7.7.2. Activity levels

2.2.7.7.2.1. The following basic values for individual radionuclides are given in Table 2.2.7.7.2.1:

(a) A_1 and A_2 in TBq;

(b) Activity concentration for exempt material in Bq/g; and

(c) Activity limits for exempt consignments in Bq.

Table 2.2.7.7.2.1 Values for Radionuclides

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Actinium (89)				
Ac-225 ([a])	8×10^{-1}	6×10^{-3}	1×10^{1}	1×10^{4}
Ac-227 ([a])	9×10^{-1}	9×10^{-5}	1×10^{-1}	1×10^{3}
Ac-228	6×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Silver (47)				
Ag-105	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Ag-108m ([a])	7×10^{-1}	7×10^{-1}	1×10^{1} ([b])	1×10^{6} ([b])
Ag-110m ([a])	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Ag-111	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Aluminium (13)				
Al-26	1×10^{-1}	1×10^{-1}	1×10^{1}	1×10^{5}
Americium (95)				
Am-241	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Am-242m ([a])	1×10^{1}	1×10^{-3}	1×10^{0} ([b])	1×10^{4} ([b])
Am-243 ([a])	5×10^{0}	1×10^{-3}	1×10^{0} ([b])	1×10^{3} ([b])
Argon (18)				
Ar-37	4×10^{1}	4×10^{1}	1×10^{6}	1×10^{8}
Ar-39	4×10^{1}	2×10^{1}	1×10^{7}	1×10^{4}
Ar-41	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{9}
Arsenic (33)				
As-72	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
As-73	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{7}
As-74	1×10^{0}	9×10^{-1}	1×10^{1}	1×10^{6}
As-76	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
As-77	2×10^{1}	7×10^{-1}	1×10^{3}	1×10^{6}
Astatine (85)				
At-211 ([a])	2×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Gold (79)				
Au-193	7×10^{0}	2×10^{0}	1×10^{2}	1×10^{7}
Au-194	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Au-195	1×10^{1}	6×10^{0}	1×10^{2}	1×10^{7}
Au-198	1×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Au-199	1×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Barium (56)				
Ba-131 ([a])	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ba-133	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Ba-133m	2×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Ba-140 ([a])	5×10^{-1}	3×10^{-1}	1×10^{1} ([b])	1×10^{5} ([b])
Beryllium (4)				
Be-7	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Be-10	4×10^{1}	6×10^{-1}	1×10^{4}	1×10^{6}
Bismuth (83)				

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Bi-205	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Bi-206	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Bi-207	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Bi-210	1×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Bi-210m ([a])	6×10^{-1}	2×10^{-2}	1×10^{1}	1×10^{5}
Bi-212 ([a])	7×10^{-1}	6×10^{-1}	1×10^{1} ([b])	1×10^{5} ([b])
Berkelium (97)				
Bk-247	8×10^{0}	8×10^{-4}	1×10^{0}	1×10^{4}
Bk-249 ([a])	4×10^{1}	3×10^{-1}	1×10^{3}	1×10^{6}
Bromine (35)				
Br-76	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Br-77	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Br-82	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Carbon (6)				
C-11	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
C-14	4×10^{1}	3×10^{0}	1×10^{4}	1×10^{7}
Calcium (20)				
Ca-41	Unlimited	Unlimited	1×10^{5}	1×10^{7}
Ca-45	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Ca-47 ([a])	3×10^{0}	3×10^{-1}	1×10^{1}	1×10^{6}
Cadmium (48)				
Cd-109	3×10^{1}	2×10^{0}	1×10^{4}	1×10^{6}
Cd-113m	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{6}
Cd-115 ([a])	3×10^{0}	4×10^{-1}	1×10^{2}	1×10^{6}
Cd-115m	5×10^{-1}	5×10^{-1}	1×10^{3}	1×10^{6}
Cerium (58)				
Ce-139	7×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ce-141	2×10^{1}	6×10^{-1}	1×10^{2}	1×10^{7}
Ce-143	9×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{6}
Ce-144 ([a])	2×10^{-1}	2×10^{-1}	1×10^{2} ([b])	1×10^{5} ([b])
Californium (98)				
Cf-248	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{4}
Cf-249	3×10^{0}	8×10^{-4}	1×10^{0}	1×10^{3}
Cf-250	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}
Cf-251	7×10^{0}	7×10^{-4}	1×10^{0}	1×10^{3}
Cf-252	5×10^{-2}	3×10^{-3}	1×10^{1}	1×10^{4}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Cf-253 ([a])	4×10^{1}	4×10^{-2}	1×10^{2}	1×10^{5}
Cf-254	1×10^{-3}	1×10^{-3}	1×10^{0}	1×10^{3}
Chlorine (17)				
Cl-36	1×10^{1}	6×10^{-1}	1×10^{4}	1×10^{6}
Cl-38	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Curium (96)				
Cm-240	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
Cm-241	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Cm-242	4×10^{1}	1×10^{-2}	1×10^{2}	1×10^{5}
Cm-243	9×10^{0}	1×10^{-3}	1×10^{0}	1×10^{4}
Cm-244	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}
Cm-245	9×10^{0}	9×10^{-4}	1×10^{0}	1×10^{3}
Cm-246	9×10^{0}	9×10^{-4}	1×10^{0}	1×10^{3}
Cm-247 ([a])	3×10^{0}	1×10^{-3}	1×10^{0}	1×10^{4}
Cm-248	2×10^{-2}	3×10^{-4}	1×10^{0}	1×10^{3}
Cobalt (27)				
Co-55	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Co-56	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Co-57	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{6}
Co-58	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Co-58m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Co-60	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Chromium (24)				
Cr-51	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Caesium (55)				
Cs-129	4×10^{0}	4×10^{0}	1×10^{2}	1×10^{5}
Cs-131	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{6}
Cs-132	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{5}
Cs-134	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{4}
Cs-134m	4×10^{1}	6×10^{-1}	1×10^{3}	1×10^{5}
Cs-135	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Cs-136	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Cs-137 ([a])	2×10^{0}	6×10^{-1}	1×10^{1} ([b])	1×10^{4} ([b])
Copper (29)				
Cu-64	6×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Cu-67	1×10^{1}	7×10^{-1}	1×10^{2}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Dysprosium (66)				
Dy-159	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Dy-165	9×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Dy-166 ([a])	9×10^{-1}	3×10^{-1}	1×10^{3}	1×10^{6}
Erbium (68)				
Er-169	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Er-171	8×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{6}
Europium (63)				
Eu-147	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Eu-148	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Eu-149	2×10^{1}	2×10^{1}	1×10^{2}	1×10^{7}
Eu-150 (short lived)	2×10^{0}	7×10^{-1}	1×10^{3}	1×10^{6}
Eu-150 (long lived)	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Eu-152	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Eu-152m	8×10^{-1}	8×10^{-1}	1×10^{2}	1×10^{6}
Eu-154	9×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Eu-155	2×10^{1}	3×10^{0}	1×10^{2}	1×10^{7}
Eu-156	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Fluorine (9)				
F-18	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
Iron (26)				
Fe-52 ([a])	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{6}
Fe-55	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{6}
Fe-59	9×10^{-1}	9×10^{-1}	1×10^{1}	1×10^{6}
Fe-60 ([a])	4×10^{1}	2×10^{-1}	1×10^{2}	1×10^{5}
Gallium (31)				
Ga-67	7×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Ga-68	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Ga-72	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Gadolinium (64)				
Gd-146 ([a])	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Gd-148	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}
Gd-153	1×10^{1}	9×10^{0}	1×10^{2}	1×10^{7}
Gd-159	3×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Germanium (32)				
Ge-68 ([a])	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Ge-71	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}
Ge-77	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Hafnium (72)				
Hf-172 ([a])	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Hf-175	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Hf-181	2×10^{0}	5×10^{-1}	1×10^{1}	1×10^{6}
Hf-182	Unlimited	Unlimited	1×10^{2}	1×10^{6}
Mercury (80)				
Hg-194 ([a])	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Hg-195m ([a])	3×10^{0}	7×10^{-1}	1×10^{2}	1×10^{6}
Hg-197	2×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Hg-197m	1×10^{1}	4×10^{-1}	1×10^{2}	1×10^{6}
Hg-203	5×10^{0}	1×10^{0}	1×10^{2}	1×10^{5}
Holmium (67)				
Ho-166	4×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{5}
Ho-166m	6×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Iodine (53)				
I-123	6×10^{0}	3×10^{0}	1×10^{2}	1×10^{7}
I-124	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
I-125	2×10^{1}	3×10^{0}	1×10^{3}	1×10^{6}
I-126	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
I-129	Unlimited	Unlimited	1×10^{2}	1×10^{5}
I-131	3×10^{0}	7×10^{-1}	1×10^{2}	1×10^{6}
I-132	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
I-133	7×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
I-134	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
I-135 ([a])	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Indium (49)				
In-111	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
In-113m	4×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
In-114m ([a])	1×10^{1}	5×10^{-1}	1×10^{2}	1×10^{6}
In-115	7×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Iridium (77)				
Ir-189 ([a])	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Ir-190	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Ir-192	1×10^{0} ([c])	6×10^{-1}	1×10^{1}	1×10^{4}
Ir-194	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Potassium (19)				
K-40	9×10^{-1}	9×10^{-1}	1×10^{2}	1×10^{6}
K-42	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{6}
K-43	7×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Krypton (36)				
Kr-79	$4 x 10^{0}$	$1 x 10^{0}$	$1 x 10^{3}$	$1 x 10^{5}$
Kr-81	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Kr-85	1×10^{1}	1×10^{1}	1×10^{5}	1×10^{4}
Kr-85m	8×10^{0}	3×10^{0}	1×10^{3}	1×10^{10}
Kr-87	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{9}
Lanthanum (57)				
La-137	3×10^{1}	6×10^{0}	1×10^{3}	1×10^{7}
La-140	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Lutetium (71)				
Lu-172	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Lu-173	8×10^{0}	8×10^{0}	1×10^{2}	1×10^{7}
Lu-174	9×10^{0}	9×10^{0}	1×10^{2}	1×10^{7}
Lu-174m	2×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Lu-177	3×10^{1}	7×10^{-1}	1×10^{3}	1×10^{7}
Magnesium (12)				
Mg-28 ([a])	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Manganese (25)				
Mn-52	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Mn-53	Unlimited	Unlimited	1×10^{4}	1×10^{9}
Mn-54	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Mn-56	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Molybdenum (42)				
Mo-93	4×10^{1}	2×10^{1}	1×10^{3}	1×10^{8}
Mo-99 ([a])	1×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Nitrogen (7)				
N-13	9×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{9}
Sodium (11)				
Na-22	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Na-24	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Niobium (41)				
Nb-93m	4×10^{1}	3×10^{1}	1×10^{4}	1×10^{7}
Nb-94	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Nb-95	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Nb-97	9×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Neodymium (60)				
Nd-147	6×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Nd-149	6×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{6}
Nickel (28)				
Ni-59	Unlimited	Unlimited	1×10^{4}	1×10^{8}
Ni-63	4×10^{1}	3×10^{1}	1×10^{5}	1×10^{8}
Ni-65	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Neptunium (93)				
Np-235	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{7}
Np-236 (short lived)	2×10^{1}	2×10^{0}	1×10^{3}	1×10^{7}
Np-236 (long lived)	9×10^{0}	2×10^{-2}	1×10^{2}	1×10^{5}
Np-237	2×10^{1}	2×10^{-3}	1×10^{0} b)	1×10^{3} b)
Np-239	7×10^{0}	4×10^{-1}	1×10^{2}	1×10^{7}
Osmium (76)				
Os-185	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Os-191	1×10^{1}	2×10^{0}	1×10^{2}	1×10^{7}
Os-191m	4×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Os-193	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Os-194 ([a])	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Phosphorus (15)				
P-32	5×10^{-1}	5×10^{-1}	1×10^{3}	1×10^{5}
P-33	4×10^{1}	1×10^{0}	1×10^{5}	1×10^{8}
Protactinium (91)				
Pa-230 ([a])	2×10^{0}	7×10^{-2}	1×10^{1}	1×10^{6}
Pa-231	4×10^{0}	4×10^{-4}	1×10^{0}	1×10^{3}
Pa-233	5×10^{0}	7×10^{-1}	1×10^{2}	1×10^{7}
Lead (82)				
Pb-201	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Pb-202	4×10^{1}	2×10^{1}	1×10^{3}	1×10^{6}
Pb-203	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Pb-205	Unlimited	Unlimited	1×10^{4}	1×10^{7}
Pb-210 ([a])	1×10^{0}	5×10^{-2}	1×10^{1} ([b])	1×10^{4} ([b])
Pb-212 ([a])	7×10^{-1}	2×10^{-1}	1×10^{1} ([b])	1×10^{5} ([b])
Palladium (46)				
Pd-103 ([a])	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{8}
Pd-107	Unlimited	Unlimited	1×10^{5}	1×10^{8}
Pd-109	2×10^{0}	5×10^{-1}	1×10^{3}	1×10^{6}
Promethium (61)				
Pm-143	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Pm-144	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Pm-145	3×10^{1}	1×10^{1}	1×10^{3}	1×10^{7}
Pm-147	4×10^{1}	2×10^{0}	1×10^{4}	1×10^{7}
Pm-148m ([a])	8×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Pm-149	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Pm-151	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Polonium (84)				
Po-210	4×10^{1}	2×10^{-2}	1×10^{1}	1×10^{4}
Praseodymium (59)				
Pr-142	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Pr-143	3×10^{0}	6×10^{-1}	1×10^{4}	1×10^{6}
Platinum (78)				
Pt-188 ([a])	1×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Pt-191	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Pt-193	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Pt-193m	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Pt-195m	1×10^{1}	5×10^{-1}	1×10^{2}	1×10^{6}
Pt-197	2×10^{1}	6×10^{-1}	1×10^{3}	1×10^{6}
Pt-197m	1×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Plutonium (94)				
Pu-236	3×10^{1}	3×10^{-3}	1×10^{1}	1×10^{4}
Pu-237	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Pu-238	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Pu-239	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Pu-240	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{3}
Pu-241 ([a])	4×10^{1}	6×10^{-2}	1×10^{2}	1×10^{5}
Pu-242	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Pu-244 ([a])	4×10^{-1}	1×10^{-3}	1×10^{0}	1×10^{4}
Radium (88)				
Ra-223 ([a])	4×10^{-1}	7×10^{-3}	1×10^{2} ([b])	1×10^{5} ([b])
Ra-224 ([a])	4×10^{-1}	2×10^{-2}	1×10^{1} ([b])	1×10^{5} ([b])
Ra-225 ([a])	2×10^{-1}	4×10^{-3}	1×10^{2}	1×10^{5}
Ra-226 ([a])	2×10^{-1}	3×10^{-3}	1×10^{1} ([b])	1×10^{4} ([b])
Ra-228 ([a])	6×10^{-1}	2×10^{-2}	1×10^{1} ([b])	1×10^{5} ([b])
Rubidium (37)				
Rb-81	2×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Rb-83 ([a])	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Rb-84	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Rb-86	5×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{5}
Rb-87	Unlimited	Unlimited	1×10^{4}	1×10^{7}
Rb (nat)	Unlimited	Unlimited	1×10^{4}	1×10^{7}
Rhenium (75)				
Re-184	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Re-184m	3×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Re-186	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Re-187	Unlimited	Unlimited	1×10^{6}	1×10^{9}
Re-188	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Re-189 ([a])	3×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Re (nat)	Unlimited	Unlimited	1×10^{6}	1×10^{9}
Rhodium (45)				
Rh-99	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Rh-101	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{7}
Rh-102	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Rh-102m	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Rh-103m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}
Rh-105	1×10^{1}	8×10^{-1}	1×10^{2}	1×10^{7}
Radon (86)				
Rn-222 ([a])	3×10^{-1}	4×10^{-3}	1×10^{1} ([b])	1×10^{8} ([b])
Ruthenium (44)				
Ru-97	5×10^{0}	5×10^{0}	1×10^{2}	1×10^{7}
Ru-103 ([a])	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ru-105	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
Ru-106 ([a])	2×10^{-1}	2×10^{-1}	1×10^{2} ([b])	1×10^{5} ([b])

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Sulphur (16)				
S-35	4×10^{1}	3×10^{0}	1×10^{5}	1×10^{8}
Antimony (51)				
Sb-122	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{4}
Sb-124	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Sb-125	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Sb-126	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Scandium (21)				
Sc-44	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Sc-46	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Sc-47	1×10^{1}	7×10^{-1}	1×10^{2}	1×10^{6}
Sc-48	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Selenium (34)				
Se-75	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Se-79	4×10^{1}	2×10^{0}	1×10^{4}	1×10^{7}
Silicon (14)				
Si-31	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Si-32	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{6}
Samarium (62)				
Sm-145	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Sm-147	Unlimited	Unlimited	1×10^{1}	1×10^{4}
Sm-151	4×10^{1}	1×10^{1}	1×10^{4}	1×10^{8}
Sm-153	9×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Tin (50)				
Sn-113 ([a])	4×10^{0}	2×10^{0}	1×10^{3}	1×10^{7}
Sn-117m	7×10^{0}	4×10^{-1}	1×10^{2}	1×10^{6}
Sn-119m	4×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Sn-121m ([a])	4×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Sn-123	8×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Sn-125	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Sn-126 ([a])	6×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Strontium (38)				
Sr-82 ([a])	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Sr-85	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Sr-85m	5×10^{0}	5×10^{0}	1×10^{2}	1×10^{7}
Sr-87m	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Sr-89	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Sr-90 ([a])	3×10^{-1}	3×10^{-1}	1×10^{2} ([b])	1×10^{4} ([b])
Sr-91 ([a])	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Sr-92 ([a])	1×10^{0}	3×10^{-1}	1×10^{1}	1×10^{6}
Tritium (1)				
T (H-3)	4×10^{1}	4×10^{1}	1×10^{6}	1×10^{9}
Tantalum (73)				
Ta-178 (long lived)	1×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Ta-179	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Ta-182	9×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{4}
Terbium (65)				
Tb-157	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Tb-158	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Tb-160	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
Technetium (43)				
Tc-95m ([a])	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Tc-96	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Tc-96m ([a])	4×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{7}
Tc-97	Unlimited	Unlimited	1×10^{3}	1×10^{8}
Tc-97m	4×10^{1}	1×10^{0}	1×10^{3}	1×10^{7}
Tc-98	8×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Tc-99	4×10^{1}	9×10^{-1}	1×10^{4}	1×10^{7}
Tc-99m	1×10^{1}	4×10^{0}	1×10^{2}	1×10^{7}
Tellurium (52)				
Te-121	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Te-121m	5×10^{0}	3×10^{0}	1×10^{2}	1×10^{5}
Te-123m	8×10^{0}	1×10^{0}	1×10^{2}	1×10^{7}
Te-125m	2×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Te-127	2×10^{1}	7×10^{-1}	1×10^{3}	1×10^{6}
Te-127m ([a])	2×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Te-129m	7×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{6}
Te-129m ([a])	8×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{6}
Te-131m ([a])	7×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Te-132 ([a])	5×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{7}
Thorium (90)				
Th-227	1×10^{1}	5×10^{-3}	1×10^{1}	1×10^{4}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Th-228 ([a])	5×10^{-1}	1×10^{-3}	1×10^{0} ([b])	1×10^{4} ([b])
Th-229	5×10^{0}	5×10^{-4}	1×10^{0} ([b])	1×10^{3} ([b])
Th-230	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Th-231	4×10^{1}	2×10^{-2}	1×10^{3}	1×10^{7}
Th-232	Unlimited	Unlimited	1×10^{1}	1×10^{4}
Th-234 ([a])	3×10^{-1}	3×10^{-1}	1×10^{3} ([b])	1×10^{5} ([b])
Th (nat)	Unlimited	Unlimited	1×10^{0} ([b])	1×10^{3} ([b])
Titanium (22)				
Ti-44 ([a])	5×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Thallium (81)				
TI-200	9×10^{-1}	9×10^{-1}	1×10^{1}	1×10^{6}
TI-201	1×10^{1}	4×10^{0}	1×10^{2}	1×10^{6}
TI-202	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
TI-204	1×10^{1}	7×10^{-1}	1×10^{4}	1×10^{4}
Thulium (69)				
Tm-167	7×10^{0}	8×10^{-1}	1×10^{2}	1×10^{6}
Tm-170	3×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Tm-171	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}
Uranium (92)				
U-230 (fast lung absorption) ([a]) ([d])	4×10^{1}	1×10^{-1}	1×10^{1} ([b])	1×10^{5} ([b])
U-230 (medium lung absorption) ([a]) ([e])	4×10^{1}	4×10^{-3}	1×10^{1}	1×10^{4}
U-230 (slow lung absorption) ([a]) ([f])	3×10^{1}	3×10^{-3}	1×10^{1}	1×10^{4}
U-232 (fast lung absorption) ([d])	4×10^{1}	1×10^{-2}	1×10^{0} ([b])	1×10^{3} ([b])
U-232 (medium lung absorption) ([e])	4×10^{1}	7×10^{-3}	1×10^{1}	1×10^{4}
U-232 (slow lung absorption) ([f])	1×10^{1}	1×10^{-3}	1×10^{1}	1×10^{4}
U-233 (fast lung absorption) ([d])	4×10^{1}	9×10^{-2}	1×10^{1}	1×10^{4}
U-233 (medium lung absorption) ([e])	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
U-233 (slow lung absorption) ([f])	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{5}
U-234 (fast lung absorption) ([d])	4×10^{1}	9×10^{-2}	1×10^{1}	1×10^{4}
U-234 (medium lung absorption) ([e])	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
U-234 (slow lung absorption) (f)	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{5}
U-235 (all lung absorption types) (a) (d) (e) (f)	Unlimited	Unlimited	1×10^{1} (b)	1×10^{4} (b)
U-236 (fast lung absorption) (d)	Unlimited	Unlimited	1×10^{1}	1×10^{4}
U-236 (medium lung absorption) (e)	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
U-236 (slow lung absorption) (f)	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{4}
U-238 (all lung absorption types) (d) (e) (f)	Unlimited	Unlimited	1×10^{1} (b)	1×10^{4} (b)
U (nat)	Unlimited	Unlimited	1×10^{0} (b)	1×10^{3} (b)
U (enriched to 20 % or less) (g)	Unlimited	Unlimited	1×10^{0}	1×10^{3}
U (dep)	Unlimited	Unlimited	1×10^{0}	1×10^{3}
Vanadium (23)				
V-48	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
V-49	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Tungsten (74)				
W-178 (a)	9×10^{0}	5×10^{0}	1×10^{1}	1×10^{6}
W-181	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
W-185	4×10^{1}	8×10^{-1}	1×10^{4}	1×10^{7}
W-187	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
W-188 (a)	4×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Xenon (54)				
Xe-122 (a)	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{9}
Xe-123	2×10^{0}	7×10^{-1}	1×10^{2}	1×10^{9}
Xe-127	4×10^{0}	2×10^{0}	1×10^{3}	1×10^{5}
Xe-131m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{4}
Xe-133	2×10^{1}	1×10^{1}	1×10^{3}	1×10^{4}
Xe-135	3×10^{0}	2×10^{0}	1×10^{3}	1×10^{10}
Yttrium (39)				
Y-87 (a)	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Y-88	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Y-90	3×10^{-1}	3×10^{-1}	1×10^{3}	1×10^{5}
Y-91	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Y-91m	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Y-92	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{5}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Y-93	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Ytterbium (70)				
Yb-169	4×10^{0}	1×10^{0}	1×10^{2}	1×10^{7}
Yb-175	3×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Zinc (30)				
Zn-65	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Zn-69	3×10^{0}	6×10^{-1}	1×10^{4}	1×10^{6}
Zn-69m ([a])	3×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Zirconium (40)				
Zr-88	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Zr-93	Unlimited	Unlimited	1×10^{3} ([b])	1×10^{7} ([b])
Zr-95 ([a])	2×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Zr-97 ([a])	4×10^{-1}	4×10^{-1}	1×10^{1} ([b])	1×10^{5} ([b])

([a]) A_1 and/or A_2 values include contributions from daughter nuclides with half-lives less than 10 days.

([b]) Parent nuclides and their progeny included in secular equilibrium are listed in the following:

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Cs-137	Ba-137m
Ce-134	La-134
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0,36), Po-212 (0,64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0,36), Po-212 (0,64)
Rn-220	Po-216
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-226	Ra-222, Rn-218, Po-214
Th-228	Ra-224, Rn-220, Po-216, Pb212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-nat	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-nat	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
U-240	Np-240m
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

([c]) The quantity may be determined from a measurement of the rate of decay or a measurement of the radiation level at a prescribed distance from the source.

([d]) These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.

([e]) These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.

([f]) These values apply to all compounds of uranium other than those specified in (d) and (e) above.

([g]) These values apply to unirradiated uranium only.

2.2.7.7.2.2. For individual radionuclides which are not listed in Table 2.2.7.7.2.1 the determination of the basic radionuclide values referred to in 2.2.7.7.2.1 shall require competent authority approval or, for international transport, multilateral approval. Where the chemical form of each radionuclide is known, it is permissible to use the A_2 value related to its solubility class as recommended by the International Commission on Radiological Protection, if the chemical forms under both normal and accident conditions of transport are taken into consideration. Alternatively, the radionuclide values in Table 2.2.7.7.2.2 may be used without obtaining competent authority approval.

Table 2.2.7.7.2.2

Basic radionuclide values for unknown radionuclides or mixtures

Radioactive contents	A_1 TBq	A_2 TBq	Activity concentration for exempt material Bq/g	Activity limits for exempt consignment Bq
Only beta or gamma emitting nuclides are known to be present	0,1	0,02	1×10^{1}	1×10^{4}
Only alpha emitting nuclides are known to be present	0,2	9×10^{-5}	1×10^{-1}	1×10^{3}
No relevant data are available	0,001	9×10^{-5}	1×10^{-1}	1×10^{3}

2.2.7.7.2.3. In the calculations of A_1 and A_2 for a radionuclide not in Table 2.2.7.7.2.1, a single radioactive decay chain in which the radionuclides are present in their naturally occurring proportions, and in which no daughter nuclide has a half-life either longer than 10 days or longer than that of the parent nuclide, shall be considered as a single radionuclide; and the activity to be taken into account and the A_1 or A_2 value to be applied shall be those corresponding to the parent nuclide of that chain. In the case of radioactive decay chains in which any daughter nuclide has a half-life either longer than 10 days or greater than that of the parent nuclide, the parent and such daughter nuclides shall be considered as mixtures of different nuclides.

2.2.7.7.2.4. For mixtures of radionuclides, the determination of the basic radionuclide values referred to in 2.2.7.7.2.1 may be determined as follows:

$$X_m = \frac{1}{\sum_i \frac{f(i)}{X(i)}}$$

where,

$f_{(i)}$ is the fraction of activity or activity concentration of radionuclide i in the mixture;

$X_{(i)}$ is the appropriate value of A_1 or A_2, or the activity concentration for exempt material or the activity limit for an exempt consignment as appropriate for the radionuclide i; and

X_m is the derived value of A_1 or A_2, or the activity concentration for exempt material or the activity limit for an exempt consignment in the case of a mixture.

2.2.7.7.2.5. When the identity of each radionuclide is known but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped and the lowest radionuclide value, as appropriate, for the radionuclides in each group may be used in applying the formulas in 2.2.7.7.2.4 and 2.2.7.7.1.4.2. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest radionuclide values for the alpha emitters or beta/gamma emitters, respectively.

2.2.7.7.2.6. For individual radionuclides or for mixtures of radionuclides for which relevant data are not available, the values shown in Table 2.2.7.7.2.2 shall be used.

2.2.7.8. Limits on transport index (TI), criticality safety index (CSI), radiation levels for packages and overpacks

2.2.7.8.1. Except for consignments under exclusive use, the transport index of any package or overpack shall not exceed 10, nor shall the criticality safety index of any package or overpack exceed 50.

2.2.7.8.2. Except for packages or overpacks carried under exclusive use under the conditions specified in 7.5.11, CW33 (3.5) (a), the maximum radiation level at any point on any external surface of a package or overpack shall not exceed 2 mSv/h.

2.2.7.8.3. The maximum radiation level at any point on any external surface of a package under exclusive use shall not exceed 10 mSv/h.

2.2.7.8.4. Packages and overpacks shall be assigned to either category I-WHITE, II-YELLOW or III-YELLOW in accordance with the conditions specified in Table 2.2.7.8.4 and with the following requirements:

(a) For a package or overpack, both the transport index and the surface radiation level conditions shall be taken into account in determining which is the appropriate category. Where the transport index satisfies the condition for one category but the surface radiation level satisfies the condition for a different category, the package or overpack shall be assigned to the higher category. For this purpose, category I-WHITE shall be regarded as the lowest category;

(b) The transport index shall be determined following the procedures specified in 2.2.7.6.1.1 and 2.2.7.6.1.2;

(c) If the surface radiation level is greater than 2 mSv/h, the package or overpack shall be carried under exclusive use and in accordance with the requirements of 7.5.11, CW33 (3.5) (a);

(d) A package carried under a special arrangement shall be assigned to category III-YELLOW;

(e) An overpack which contains packages carried under special arrangement shall be assigned to category III-YELLOW.

Table 2.2.7.8.4

Categories of packages and overpacks

Conditions		
Transport index	Maximum radiation level at any point on external surface	Category
0 ([a])	Not more than 0,005 mSv/h	I-WHITE
More than 0 but not more than 1 ([a])	More than 0,005 mSv/h but not more than 0,5 mSv/h	II-YELLOW
More than 1 but not more than 10	More than 0,5 mSv/h but not more than 2 mSv/h	III-YELLOW
More than 10	More than 2 mSv/h but not more than 10 mSv/h	III-YELLOW ([b])

([a]) If the measured TI is not greater than 0,05, the value quoted may be zero in accordance with 2.2.7.6.1.1(c).
([b]) Shall also be carried under exclusive use.

2.2.7.9. Requirements and controls for transport of excepted packages

2.2.7.9.1. Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles as specified in 2.2.7.7.1.2 and empty packagings as specified in 2.2.7.9.6 may be carried under the following conditions:

(a) The applicable requirements specified in 2.2.7.9.2, 3.3.1 (special requirements 172 or 290), 4.1.9.1.2, 5.2.1.2, 5.2.1.7.1, 5.2.1.7.2, 5.2.1.7.3, 5.4.1.2.5.1 (a), 7.5.11 CW33 (5.2) and, as applicable 2.2.7.9.3- 2.2.7.9.6;

(b) The requirements for excepted packages specified in 6.4.4;

(c) If the excepted package contains fissile material, one of the fissile exceptions provided by 6.4.11.2 shall apply and the requirement of 6.4.7.2 shall be met.

2.2.7.9.2. The radiation level at any point on the external surface of an excepted package shall not exceed 5 μSv/h.

2.2.7.9.3. Radioactive material which is enclosed in or is included as a component part of an instrument or other manufactured article, with activity not exceeding the item and package limits specified in columns 2 and 3 respectively of Table 2.2.7.7.1.2.1, may be carried in an excepted package provided that:

(a) The radiation level at 10 cm from any point on the external surface of any unpackaged instrument or article is not greater than 0,1 mSv/h; and

(b) Each instrument or article (except radioluminescent time-pieces or devices) bears the marking 'RADIOACTIVE'; and

(c) The active material is completely enclosed by non-active components (a device performing the sole function of containing radioactive material shall not be considered to be an instrument or manufactured article).

2.2.7.9.4. Radioactive material in forms other than as specified in 2.2.7.9.3, with an activity not exceeding the limit specified in column 4 of Table 2.2.7.7.1.2.1, may be carried in an excepted package provided that:

(a) The package retains its radioactive contents under routine conditions of transport; and

(b) The package bears the marking 'RADIOACTIVE' on an internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package.

2.2.7.9.5. A manufactured article in which the sole radioactive material is unirradiated natural uranium, unirradiated depleted uranium or unirradiated natural thorium may be carried as an excepted package provided that the outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

2.2.7.9.6. An empty packaging which had previously contained radioactive material may be carried as an excepted package provided that:

(a) It is in a well maintained condition and securely closed;

(b) The outer surface of any uranium or thorium in its structure is covered with an inactive sheath made of metal or some other substantial material;

(c) The level of internal non-fixed contamination does not exceed one hundred times the levels specified in 4.1.9.1.2; and

(d) Any labels which may have been displayed on it in conformity with 5.2.2.1.11.1 are no longer visible.

2.2.7.9.7. The following requirements do not apply to excepted packages and the controls for the carriage of excepted packages:

2.2.7.4.1, 2.2.7.4.2, 4.1.9.1.3, 4.1.9.1.4, 5.1.3.2, 5.1.5.1.1, 5.1.5.1.2, 5.2.2.1.11.1, 5.4.1.2.5.1 except for (a), 5.4.1.2.5.2, 5.4.1.3, 6.4.6.1, 7.5.11 CW 33 except for paragraph (5.2).

2.2.7.10. Reserved

2.2.8. *Class 8 Corrosive substances*

2.2.8.1. Criteria

2.2.8.1.1. The heading of Class 8 covers substances and articles containing substances of this Class which by chemical action attack epithelial tissue — of skin or mucous membranes — with which they are in contact, or which in the event of leakage are capable of damaging or destroying other goods, or means of transport, and may also cause other hazards. The heading of this Class also covers other substances which form a corrosive liquid only in the presence of water, or which produce corrosive vapour or mist in the presence of natural moisture of the air.

2.2.8.1.2. Substances and articles of Class 8 are subdivided as follows:

C1-C10 Corrosive substances without subsidiary risk
- C1-C4 Acid substances
  - C1 Inorganic, liquid
  - C2 Inorganic, solid
  - C3 Organic, liquid
  - C4 Organic, solid
- C5-C8 Basic substances
  - C5 Inorganic, liquid
  - C6 Inorganic, solid
  - C7 Organic, liquid
  - C8 Organic, solid
- C9-C10 Other corrosive substances
  - C9 Liquid
  - C10 Solid

C11	Articles	
CF	Corrosive substances, flammable	
	CF1	Liquid
	CF2	Solid
CS	Corrosive substances, self-heating	
	CS1	Liquid
	CS2	Solid
CW	Corrosive substances which, in contact with water, emit flammable gases	
	CW1	Liquid
	CW2	Solid
CO	Corrosive substances, oxidizing	
	CO1	Liquid
	CO2	Solid
CT	Corrosive substances, toxic	
	CT1	Liquid
	CT2	Solid
CFT	Corrosive substances, flammable, liquid, toxic	
COT	Corrosive substances, oxidizing, toxic	

Classification and assignment of packing groups

2.2.8.1.3. Substances of Class 8 shall be assigned to one of the following packing groups according to the degree of danger they present for carriage, as follows:

Packing group I: highly corrosive substances

Packing group II: corrosive substances

Packing group III: slightly corrosive substances.

2.2.8.1.4. Substances and articles classified in Class 8 are listed in table A of Chapter 3.2. Allocation of substances to packing groups I, II and III has been made on the basis of experience taking into account such additional factors as inhalation risk ([1]) and reactivity with water (including the formation of dangerous decomposition products).

2.2.8.1.5. Substances, including mixtures, not mentioned by name in table A of Chapter 3.2 can be assigned to the relevant entry of 2.2.8.3, and to the relevant packing group on the basis of the length of time of contact necessary to produce full thickness destruction of human skin in accordance with the criteria of (a) to (c) below.

Substances which are judged not to cause full thickness destruction of human skin shall still be considered for their potential to cause corrosion to certain metal surfaces.

In assigning the packing group, account shall be taken of human experience in instances of accidental exposure.

In the absence of human experience, the grouping shall be based on data obtained from experiments in accordance with OECD Guideline 404 ([2]).

(a) Packing group I is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period up to 60 minutes starting after the exposure time of 3 minutes or less.

(b) Packing group II is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than 3 minutes but not more than 60 minutes.

([1]) A substance or preparation meeting the criteria of Class 8 having an inhalation toxicity of dusts and mists (LC_{50}) in the range of packing group I, but toxicity through oral ingestion or dermal contact only in the range of packing group III or less, shall be assigned to Class 8.

([2]) OECD guidelines for Testing of Chemicals, No. 404 'Acute Dermal Irritation/Corrosion' (1992).

(c) Packing group III is assigned to substances that:

— cause full thickness destruction of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than 60 minutes but not more than 4 hours; or

— are judged not to cause full thickness destruction of intact skin tissue, but which exhibit a corrosion rate on steel or aluminium surfaces exceeding 6,25 mm a year at a test temperature of 55 °C.

For the purposes of testing steel, type P235 [ISO 9328(II):1991] or a similar type, and for testing aluminium, non-clad types 7075-T6 or AZ5GU-T6 shall be used. An acceptable test is prescribed in ASTM G31-72 (Reapproved 1990).

2.2.8.1.6. If substances of Class 8, as a result of admixtures, come into categories of risk different from those to which the substances mentioned by name in table A of Chapter 3.2 belong, these mixtures or solutions shall be assigned to the entries to which they belong, on the basis of their actual degree of danger.

NOTE: For the classification of solutions and mixtures (such as preparations and wastes), see also 2.1.3.

2.2.8.1.7. On the basis of the criteria set out in 2.2.8.1.5, it may also be determined whether the nature of a solution or mixture mentioned by name or containing a substance mentioned by name is such that the solution or mixture is not subject to the requirements for this Class.

2.2.8.1.8. Substances, solutions and mixtures, which:

— do not meet the criteria of Directives 67/548/EEC ([1]) or 88/379/EEC ([2]) as amended and therefore are not classified as corrosive according to these directives, as amended; and

— do not exhibit a corrosive effect on steel or aluminium,

may be considered as substances not belonging to Class 8.

NOTE: UN No 1910 calcium oxide and UN No 2812 sodium aluminate, listed in the UN Model Regulations, are not subject to the requirements of this Directive.

2.2.8.2. Substances not accepted for carriage

2.2.8.2.1. The chemically unstable substances of Class 8 shall not be accepted for carriage unless the necessary steps have been taken to prevent their dangerous decomposition or polymerization during carriage. To this end it shall in particular be ensured that receptacles and tanks do not contain any substance liable to promote these reactions.

2.2.8.2.2. The following substances shall not be accepted for carriage:

— UN No 1798 NITROHYDROCHLORIC ACID;

— chemically unstable mixture of spent sulphuric acid;

— chemically unstable mixtures of nitrating acid or mixtures of residual nitric acids, not denitrated;

— perchloric acid aqueous solution with more than 72 % pure acid, by mass, or mixtures of perchloric acid with any liquid other than water;

The following substance shall not be accepted for carriage by rail:

— sulphur trioxide, at least 99,95 % pure, without inhibitor (non-stabilized).

([1]) Council of the European Communities Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (Official Journal of the European Communities OJ L 196, 16.8.1967, p. 1).

([2]) Council of the European Communities Directive 88/379/EEC of 7 June 1988 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous preparations (Official Journal of the European Communities OJ L 187, 16.7.1988, p. 14).

2.2.8.3. List of collective entries

Corrosive substances without subsidiary risks

Class	Type	State	Code	UN No.	Name
Acid **C1-C4**	inorganic	liquid	**C1**	2584	ALKYLSULPHONIC ACIDS, LIQUID with more than 5 % free sulphuric acid or
				2584	ARYLSULPHONIC ACIDS, LIQUID with more than 5 % free sulphuric acid
				2693	BISULPHITES, AQUEOUS SOLUTION, N.O.S.
				2837	BISULPHATES, AQUEOUS SOLUTION
				3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
		solid	**C2**	1740	HYDROGENDIFLUORIDES, N.O.S.
				2583	ALKYLSULPHONIC ACIDS, SOLID with more than 5 % free sulphuric acid or
				2583	ARYLSULPHONIC ACIDS, SOLID with more than 5 % free sulphuric acid
				3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
	organic	liquid	**C3**	2586	ALKYLSULPHONIC ACIDS, LIQUID with not more than 5 % free sulphuric acid or
				2586	ARYLSULPHONIC ACIDS, LIQUID with not more than 5 % free sulphuric acid
				2987	CHLOROSILANES, CORROSIVE, N.O.S.
				3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C_2-C_{12} homologues)
				3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S
		solid	**C4**	2430	ALKYLPHENOLS, SOLID, N.O.S. (including C_2-C_{12} homologues)
				2585-	ALKYLSULPHONIC ACIDS, SOLID with not more than 5 % free sulphuric acid or
				2585	ARYLSULPHONIC ACIDS, SOLID with not more than 5 % free sulphuric acid
				3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Basic **C5-C8**	inorganic	liquid	**C5**	1719	CAUSTIC ALKALI LIQUID, N.O.S.
				2797	BATTERY FLUID, ALKALI
				3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
		solid	**C6**	3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.
	organic	liquid	**C7**	2735	AMINES, LIQUID, CORROSIVE, N.O.S. or
				2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
				3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
		solid	**C8**	3259	AMINES, SOLID, CORROSIVE, N.O.S., or
				3259	POLYAMINES, SOLID, CORROSIVE, N.O.S.
				3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.
Other corrosive substances		liquid	**C9**	1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.
				2801	DYE, LIQUID, CORROSIVE, N.O.S. or
				2801	DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.
				3066	PAINT (including paint, enamel, stain, shellac, varnish, polish, liquid filler and lacquer base) or
				3066	PAINT RELATED MATERIAL (including paint thinning or reducing compound)
				1760	CORROSIVE LIQUID, N.O.S.
		solid (a)	**C10**	3147	DYE, SOLID, CORROSIVE, N.O.S. or
				3147	DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.
				3244	SOLIDS CONTAINING CORROSIVE LIQUID, N.O.S.
				1759	CORROSIVE SOLID, N.O.S.
Articles			**C11**	2794	BATTERIES, WET, FILLED WITH ACID, electric storage
				2795	BATTERIES, WET, FILLED WITH ALKALI, electric storage
				2800	BATTERIES, WET, NON-SPILLABLE, electric storage
				3028	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, electric storage

(CONTINUED)

Corrosive substances with subsidiary risk(s)

Subsidiary risk	State	Code	UN No	Name
Flammable ([b]), ([c]), ([d]) **CF**	liquid ([b]), ([c]), ([d])	**CF1**	2734 2734 2986 2920	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. CHLOROSILANES, CORROSIVE, FLAMMABLE, N.O.S. CORROSIVE LIQUID, FLAMMABLE, N.O.S.
	solid	**CF2**	2921	CORROSIVE SOLID, FLAMMABLE, N.O.S.
Self-heating **CS**	liquid	**CS1**	3301	CORROSIVE LIQUID, SELF-HEATING, N.O.S.
	solid	**CS2**	3095	CORROSI-VE SOLID, SELF-HEATING, N.O.S.
Water-reactive **CW**	liquid ([d])	**CW1**	3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.
	solid	**CW2**	3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.
Oxidizing **CO**	liquid	**CO1**	3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.
	solid	**CO2**	3084	CORROSIVE SOLID, OXIDIZING, N.O.S.
Toxic ([f]) **CT**	liquid ([e])	**CT1**	2922	CORROSIVE LIQUID, TOXIC, N.O.S.
	solid ([g])	**CT2**	2923	CORROSIVE SOLID, TOXIC, N.O.S.
Flammable, liquid, toxic ([f])		**CFT**		(no collective entry with this classification code available; where necessary, assignment to a collective entry with a classification code to be determined in accordance with the precedence of hazard table in 2.1.3.9)
Oxidizing, toxic ([f]), ([g])		**COT**		(no collective entry with this classification code available; where necessary, assignment to a collective entry with a classification code to be determined in accordance with the precedence of hazard table in 2.1.3.9)

([a]) Mixtures of solids which are not subject to the requirements of this Directive and corrosive liquids, may be carried under UN No 3244 without being subject to the classification criteria of Class 8, provided there is no free liquid visible at the time the substance is loaded or at the time the wagon or container is closed. Each packaging shall correspond to a design type which has passed the leakproofness test for Packaging group II level.
([b]) Flammable corrosive liquids having a flash-point below 23°C, other than UN Nos. 2734 and 2920, are substances of Class 3.
([c]) Flammable, slightly corrosive liquids having a flash-point between 23°C and 61°C, are substances of Class 3.
([d]) Chlorosilanes which, in contact with water or moist air, emit flammable gases, are substances of Class 4.3.
([e]) Chloroformates having predominantly toxic properties are substances of Class 6.1.
([f]) Corrosive substances which are highly toxic by inhalation, as defined in 2.2.61.1.4 to 2.2.61.1.9 are substances of Class 6.1.
([g]) UN 1690 SODIUM FLUORIDE, UN 1812 POTASSIUM FLUORIDE, UN 2505 AMMONIUM FLUORIDE, UN 2674 SODIUM FLUOROSILICATE and UN 2856 FLUOROSILICATES, N.O.S. are substances of Class 6.1.

2.2.9. *Class 9 Miscellaneous dangerous substances and articles*

2.2.9.1. C r i t e r i a

2.2.9.1.1. The heading of Class 9 covers substances and articles which, during carriage, present a danger not covered by the heading of other classes.

2.2.9.1.2. The substances and articles of Class 9 are subdivided as follows:

M1 Substances which, on inhalation as fine dust, may endanger health

M2 Substances and apparatus which, in the event of fire, may form dioxins

M3 Substances evolving flammable vapour

M4 Lithium batteries

M5 Life-saving appliances

M6-M8 Environmentally hazardous substances

M6 Pollutant to the aquatic environment, liquid

M7 Pollutant to the aquatic environment, solid

M8 Genetically modified micro-organisms and organisms

M9-M10 Elevated temperature substances

M9 Liquid

M10 Solid

M11 Other substances presenting a danger during carriage, but not meeting the definitions of another class.

Definitions and classification

2.2.9.1.3. Substances and articles classified in Class 9 are listed in table A of Chapter 3.2. The assignment of substances and articles not mentioned by name in table A of Chapter 3.2 to the relevant entry of that table or of 2.2.9.3 shall be done in accordance with 2.2.9.1.4 to 2.2.9.1.14 below.

Substances which, on inhalation as fine dust, may endanger health

2.2.9.1.4. Substances which, on inhalation as fine dust, may endanger health include asbestos and mixtures containing asbestos.

Substances and apparatus which, in the event of fire, may form dioxins

2.2.9.1.5. Substances and apparatus which, in the event of fire, may form dioxins include polychlorinated biphenyls (PCBs) and terphenyls (PCTs) and polyhalogenated biphenyls and terphenyls and mixtures containing these substances, as well as apparatus such as transformers, condensers and other apparatus containing those substances or mixtures.

NOTE: Mixtures with a PCB or PCT content of not more than 50 mg/kg are not subject to the requirements of RID.

Substances evolving flammable vapour

2.2.9.1.6. Substances evolving flammable vapour include polymers containing flammable liquids with a flash-point not exceeding 55 °C.

Lithium batteries

2.2.9.1.7. Lithium cells and batteries may be assigned to Class 9 if they meet the requirements of special requirement 230 of Chapter 3.3. They are not subject to the requirements of this Directive if they meet the requirements of special requirement 188 of Chapter 3.3. They shall be classified in accordance with the procedures of section 38.3 of the Manual of Tests and Criteria.

Life-saving appliances

2.2.9.1.8. Life-saving appliances include life-saving appliances and motor vehicle components which meet the descriptions of special provisions 235 or 296 of Chapter 3.3.

Environmentally hazardous substances

2.2.9.1.9. Environmentally hazardous substances include liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances (such as preparations and wastes), which cannot be classified in the other classes or under any other entry of Class 9 listed in table A of Chapter 3.2. It also includes genetically modified micro-organisms and organisms.

Pollutants to the aquatic environment

2.2.9.1.10. Assignment of a substance to the entries UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S and UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. as pollutant to the aquatic environment shall be as indicated in 2.3.5. Substances already classified as environmentally hazardous under UN 3077 and 3082 are listed in 2.2.9.4.

Genetically modified micro-organisms or organisms

2.2.9.1.11. Genetically modified micro-organisms are micro-organisms in which the genetic material has been deliberately altered by technical means or by such means that cannot occur naturally. Genetically modified micro-organisms within the meaning of Class 9 are those which are not dangerous for humans and animals, but which could alter animals, plants, microbiological substances and ecosystems in such a way as cannot occur naturally.

NOTE: 1: Genetically modified micro-organisms which are infectious are substances of Class 6.2, UN Nos 2814 and 2900.

2: Genetically modified micro-organisms which have received a consent for deliberate release into the environment ([1]) are not subject to the requirements for this Class.

3: Live vertebrate or invertebrate animals shall not be used to carry genetically modified micro-organisms classified in Class 9 unless the substance can be carried no other way.

2.2.9.1.12. Genetically modified organisms, which are known or suspected to be dangerous to the environment shall be carried in accordance with conditions specified by the competent authority of the country of origin.

Elevated temperature substances

2.2.9.1.13. Elevated temperature substances include substances which are carried or handed over for carriage in the liquid state at or above 100 °C and, in the case of those with a flash-point, below their flash-point. They also include solids which are carried or handed over for carriage at or above 240 °C.

NOTE: Elevated temperature substances may be assigned to Class 9 only if they do not meet the criteria of any other class.

Other substances presenting a danger during carriage but not meeting the definitions of another class.

2.2.9.1.14. The following other miscellaneous substances not meeting the definitions of another class are assigned to Class 9:

— Solid ammonia compound having a flash-point below 61 °C

— Low hazard dithionite

— Highly volatile liquid

— Substance emitting noxious fumes

— Substances containing allergens

— Chemical kits and first aid kits

NOTE: The following substances and articles listed in the UN Model Regulations are not subject to the requirements of this Directive: UN 1845 carbon dioxide, solid (dry ice), UN 2071 ammonium nitrate fertilizers, UN 2216 fish meal (fish scrap), stabilized, UN 2807 magnetized material, UN 3166 engines, internal combustion, including when fitted in machinery or vehicles, UN 3171 battery-powered vehicle or 3171 battery-powered equipment, UN 3334 aviation regulated liquid, n.o.s., UN 3335 aviation regulated solid, n.o.s.

Assignment of packing groups

2.2.9.1.15. The substances and articles of Class 9 listed table A of Chapter 3.2 shall be assigned to one of the following packing groups according to their degree of danger:

Packing group II: substances presenting medium danger

Packing group III: substances presenting low danger

([1]) See in particular Part C of Directive 90/220/EEC (Official Journal of the European Communities, OJ L 117, 8.5.1990, pp. 18-20), which sets out the authorization procedures for the European Community.

2.2.9.2. Substances and articles not accepted for carriage

The following substances and articles shall not be accepted for carriage:

— Lithium batteries which do not meet the relevant conditions of special requirements 188, 230, 287 and/or 636 of Chapter 3.3.

— Uncleaned empty containment vessels for apparatus such as transformers and condensers and hydraulic equipment containing substances assigned to UN Nos 2315, 3151 or 3152.

2.2.9.3. List of entries

Substances which, on inhalation as fine dust, may endanger health		M1	2212	BLUE ASBESTOS (crocidolite) or
			2212	BLUE ASBESTOS (amosite, mysorite)
			2590	WHITE ASBESTOS (chrysotile, actinolite, anthophyllite, tremolite)
Substances and apparatus which, in the event of fire, may form dioxins		M2	2315	POLYCHLORINATED BIPHENYLS
			3151	POLYHALOGENATED BIPHENYLS, LIQUID or
			3151	POLYHALOGENATED TERPHENYLS, LIQUID
			3152	POLYHALOGENATED BIPHENYLS, SOLID or
			3152	POLYHALOGENATED TERPHENYLS, SOLID
Substances evolving flammable vapour		M3	2211	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour
			3314	PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form evolving flammable vapour
Lithium batteries		M4	3090	LITHIUM BATTERIES
			3091	LITHIUM BATTERIES CONTAINED IN EQUIPMENT or
			3091	LITHIUM BATTERIES PACKED WITH EQUIPMENT
Life-saving appliances		M5	2990	LIFE-SAVING APPLIANCES, SELF-INFLATING such as aircraft evacuation chutes, aircraft survival kits an maritime life-saving appliances
			3072	LIFE-SAVING APPLIANCES NOT SELF-INFLATING
			3268	AIR BAG INFLATORS, pyrotechnic or
			3268	AIR BAG MODULES, pyrotechnic or
			3268	SEAT-BELT PRETENSIONERS, pyrotechnic
Environmentally hazardous substances	Water pollutants, liquid	M6	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	Water pollutants, solid	M7	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
	genetically modified micro-organisms and organisms	M8	3245	GENETICALLY MODIFIED MICRO-ORGANISMS
Elevated temperature substances	liquid	M9	3257	ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100°C and below its flash-point (including molten metals, molten salts, etc.)
	solid	M10	3258	ELEVATED TEMPERATURE SOLID, N.O.S., at or above 240 °C
Other substances which may be dangerous during carriage and which do not meet the definition of another Class		M11		No collective entry available. Only the following substances listed in Table A of Chapter 3.2 with this classification code shall be subject to the requirements of Class 9.
			1841	ACETALDEHYDE AMMONIA
			1931	ZINC DITHIONITE
			1941	DIBROMODIFLUOROMETHANE
			1990	BENZALDEHYDE
			2969	CASTOR BEANS or
			2969	CASTOR MEAL or
			2969	CASTOR POMACE or
			2969	CASTOR FLAKE
			3316	CHEMICAL KIT or
			3316	FIRST AID KIT

2.2.9.4. Substances already classified as environmentally hazardous which do not belong to any other class or to Class 9 entries other than the entries UN 3077 or 3082

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. pollutant to the aquatic environment, liquid
alcohol (C_6 — C_{17}) (secondary) poly (3-6) ethoxylate
alcohol (C_{12} — C_{15}) poly (1-3) ethoxylate
alcohol (C_{13} — C_{15}) poly (1-6) ethoxylate
alpha-cypermethrin
butyl benzyl phthalate
chlorinated paraffins (C_{10} — C_{13})
1-chlorooctane
cresyl diphenyl phosphate
cyfluthrin
decyl acrylate
di-n-butyl phthalate
1,6-dichlorohexane
diisopropylbenzenes
isodecyl acrylate
isodecyl diphenyl phosphate
isoctyl nitrate
malathion
resmethrin
triaryl phosphates
tricresyl phosphates
triethyl benzene
trixylenyl phosphate

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. pollutant to the aquatic environment, solid
chlorohexidine
chlorinated paraffins (C_{10} — C_{13})
p-dichlorobenzene
diphenyl
diphenyl ether
fenbutadin oxide
mercurous chloride (calomel)
tributyltin phosphate
zinc bromide

CHAPTER 2.3

Test methods

2.3.0. *General*

Unless otherwise provided for in Chapter 2.2 or in this section, the test methods to be used for the classification of dangerous goods are those described in the Manual of Tests and Criteria.

2.3.1. *Exudation test for blasting explosives of type A*

2.3.1.1. Blasting explosives of type A (UN 0081) shall, if they contain more than 40 % liquid nitric ester, in addition to the testing specified in the Manual of Tests and Criteria, satisfy the following exudation test.

2.3.1.2. The apparatus for testing blasting explosive for exudation (figs. 1 to 3) consists of a hollow bronze cylinder. This cylinder, which is closed at one end by a plate of the same metal, has an internal diameter of 15,7 mm and a depth of 40 mm. It is pierced by 20 holes 0,5 mm in diameter (four sets of five holes) on the circumference. A bronze piston, cylindrically fashioned over a length of 48 mm and having a total length of 52 mm, slides into the vertically placed cylinder. The piston, whose diameter is 15,6 mm, is loaded with a mass of 2 220 g so that a pressure of 120 kPa (1,2 bar) is exerted on the base of the cylinder.

2.3.1.3. A small plug of blasting explosive weighing 5 to 8 g, 30 mm long and 15 mm in diameter, is wrapped in very fine gauze and placed in the cylinder; the piston and its loading mass are then placed on it so that the blasting explosive is subjected to a pressure of 120 kPa (1,2 bar). The time taken for the appearance of the first signs of oily droplets (nitroglycerin) at the outer orifices of the cylinder holes is noted.

2.3.1.4. The blasting explosive is considered satisfactory if the time elapsing before the appearance of the liquid exudations is more than five minutes, the test having been carried out at a temperature of 15 °C to 25 °C.

Test of blasting explosive for exudation

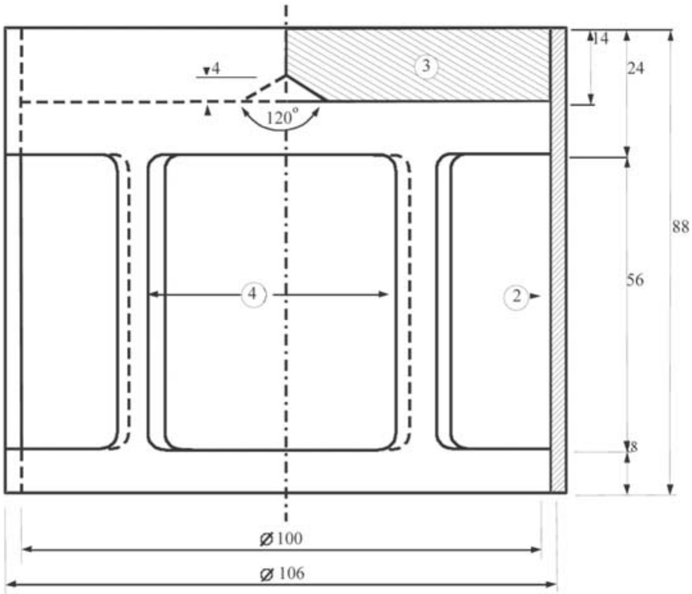


Fig. 1: Bel-form charge mass 2 220 g, capable of being suspended from a bronze piston

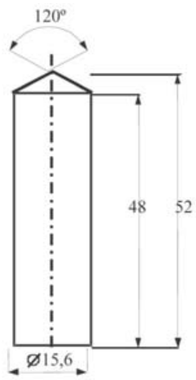


Fig. 2: Cylindrical bronze piston, dimensions in mm

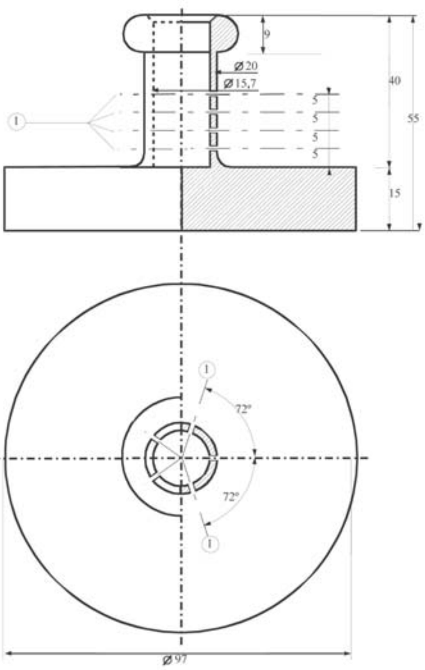


Fig. 3: Hollow bronze cylinder, doses at one end; plan and cut cimensions in mm

Fig. 1 t/m 3:

(1) 4 series of 5 holes 0,5 ∅
(2) copper
(3) iron plate with centra cone at the interior lace
(4) 4 openings, approximately 46 × 56, set at even intervals on the periphery

2.3.2. *Conditions relating to nitrocellulose mixtures of Class 4.1*

2.3.2.1. Nitrocellulose heated for half an hour at 132 °C shall not give off visible yellowish-brown nitrous fumes (nitrous gases). The ignition temperature shall be above 180 °C. See 2.3.2.3 to 2.3.2.8, 2.3.2.9(a) and 2.3.2.10 below.

2.3.2.2. 3 g of plasticized nitrocellulose, heated for one hour at 132 °C, shall not give off visible yellowish-brown nitrous fumes (nitrous gases). The ignition temperature shall be above 170 °C. See 2.3.2.3 to 2.3.2.8, 2.3.2.9(a) and 2.3.2.10 below.

2.3.2.3. The test procedures set out below are to be applied when differences of opinion arise as to the acceptability of substances for carriage by rail.

2.3.2.4. If other test procedures are used to verify the conditions of stability referred to above, these procedures shall lead to the same findings as could be reached by the methods specified below.

2.3.2.5. In carrying out the stability tests by heating described below, the temperature of the oven containing the sample under test shall not deviate by more than 2 °C from the prescribed temperature; the prescribed duration of a 30-minute or 60-minute test shall be observed to within two minutes. The oven shall be such that the required temperature is restored not more than five minutes after insertion of the sample.

2.3.2.6. Before undergoing the tests in 2.3.2.9 and 2.3.2.10, the samples shall be dried for not less than 15 hours at the ambient temperature in a vacuum desiccator containing fused and granulated calcium chloride, the sample substance being spread in a thin layer; for this purpose, substances which are neither in powder form nor fibrous shall be ground, or grated, or cut into small pieces. The pressure in the desiccator shall be brought below 6,5 kPa (0,065 bar).

2.3.2.7. Before being dried as prescribed in 2.3.2.6 above, substances conforming to 2.3.2.2 shall undergo preliminary drying in a well-ventilated oven, with its temperature set at 70 °C, until the loss of mass per quarter-hour is less than 0,3 % of the original mass.

2.3.2.8. Weakly nitrated nitrocellulose conforming to 2.3.2.1 shall first undergo preliminary drying as prescribed in 2.3.2.7 above; drying shall then be completed by keeping the nitrocellulose for at least 15 hours over concentrated sulphuric acid in a desiccator.

2.3.2.9. Test of chemical stability under heat

(a) Test of the substance listed in paragraph 2.3.2.1 above.

(i) In each of two glass test tubes having the following dimensions:

length … 350 mm,

internal diameter … 16 mm,

thickness of wall … 1,5 mm,

is placed 1 g of substance dried over calcium chloride (if necessary the drying shall be carried out after reducing the substance to pieces weighing not more than 0,05g each). Both test tubes, completely covered with loose-fitting closures, are then so placed in an oven that at least four-fifths of their length is visible, and are kept at a constant temperature of 132 °C for 30 minutes. It is observed whether nitrous gases in the form of yellowish-brown fumes clearly visible against a white background are given off during this time.

(ii) In the absence of such fumes the substance is deemed to be stable.

(b) Test of plasticized nitrocellulose (see 2.3.2.2).

(i) 3 g of plasticized nitrocellulose are placed in glass test tubes, similar to those referred to in (a), which are then placed in an oven kept at a constant temperature of 132 °C.

(ii) The test tubes containing the plasticized nitrocellulose are kept in the oven for one hour. During this time no yellowish-brown nitrous fumes (nitrous gases) shall be visible. Observation and appraisal as in (a).

2.3.2.10. Ignition temperature (see 2.3.2.1 and 2.3.2.2)

(a) The ignition temperature is determined by heating 0,2 g of substance enclosed in a glass test tube immersed in a Wood's alloy bath. The test tube is placed in the bath when the latter has reached 100 °C. The temperature of the bath is then progressively increased by 5 °C per minute.

(b) The test tubes must have the following dimensions:

length … 125 mm,

internal diameter … 15 mm,

thickness of wall … 0,5 mm.

and shall be immersed to a depth of 20 mm.

(c) The test shall be repeated three times, the temperature at which ignition of the substance occurs, i.e., slow or rapid combustion, deflagration or detonation, being noted each time.

(d) The lowest temperature recorded in the three tests is the ignition temperature.

2.3.3. *Tests relating to flammable liquids of Classes 3, 6.1 and 8*

2.3.3.1. Test for determining flash-point

2.3.3.1.1. The flash-point shall be determined by means of one of the following types of apparatus:

(a) Abel

(b) Abel-Pensky

(c) Tag

(d) Pensky-Martens

(e) Apparatus in accordance with ISO 3679:1983 or ISO 3680:1983.

2.3.3.1.2. To determine the flash-point of paints, gums and similar viscous products containing solvents, only apparatus and test methods suitable for determining the flash-point for viscous liquids shall be used, in accordance with the following standards:

(a) International Standard ISO 3679: 1983;

(b) International Standard ISO 3680: 1983;

(c) International Standard ISO 1523: 1983;

(d) German Standard DIN 53213: 1978, Part 1

2.3.3.1.3. The test procedure shall be either according to an equilibrium method or according to a non-equilibrium method.

2.3.3.1.4. For the procedure according to an equilibrium method, see:

(a) International Standard ISO 1516: 1981;

(b) International Standard ISO 3680: 1983;

(c) International Standard ISO 1523: 1983;

(d) International Standard ISO 3679: 1983

2.3.3.1.5. The procedure according to a non-equilibrium method shall be:

(a) for the Abel apparatus, see:

(i) British Standard BS 2000 Part 170: 1995;

(ii) French Standard NF MO7-011: 1988;

(iii) French Standard NF T66-009: 1969

(b) for the Abel-Pensky apparatus, see:

(i) German Standard DIN 51755, Part 1: 1974 (for temperatures from 5 °C to 65 °C);

(ii) German Standard DIN 51755, Part 2: 1978 (for temperatures below 5 °C);

(iii) French Standard NF MO7-036: 1984

(c) for the Tag apparatus, see:

American Standard ASTM D 56: 1993

(d) for the Pensky-Martens apparatus, see:

(i) International Standard ISO 2719: 1988;

(ii) European Standard EN 22719 in each of its national versions (e.g. BS 2000, part 404/EN 22719): 1994;

(iii) American Standard ASTM D 93: 1994;

(iv) Institute of Petroleum Standard IP 34: 1988

2.3.3.1.6. The test methods listed in 2.3.3.1.4 and 2.3.3.1.5 shall only be used for flash-point ranges which are specified in the individual methods. The possibility of chemical reactions between the substance and the sample holder shall be considered when selecting the method to be used. The apparatus shall, as far as is consistent with safety, be placed in a draught-free position. For safety, a method utilizing a small sample size, around 2 ml, shall be used for organic peroxides and self-reactive substances (also known as 'energetic' substances), or for toxic substances.

2.3.3.1.7. When the flash-point, determined by a non-equilibrium method in accordance with 2.3.3.1.3 is found to be 23 ± 2 °C or 61 ± 2 °C, it shall be confirmed for each temperature range by an equilibrium method in accordance with 2.3.3.1.2

2.3.3.1.8. In the event of a dispute as to the classification of a flammable liquid, the classification proposed by the consignor shall be accepted if a check-test of the flash-point, yields a result not differing by more than 2 °C from the limits (23 °C and 61 °C respectively) stated in 2.2.3.1. If the difference is more than 2 °C, a second check-test shall be carried out, and the lowest figure of the flash-points obtained in either check-test shall be adopted.

2.3.3.2. Test for determining peroxide content

To determine the peroxide content of a liquid, the procedure is as follows:

A quantity p (about 5 g, weighed to the nearest 0,01 g) of the liquid to be titrated is placed in an Erlenmeyer flask; 20 cm^3 of acetic anhydride and about 1 g of powdered solid potassium iodide are added; the flask is shaken and, after 10 minutes, heated for 3 minutes to about 60 °C. When it has been left to cool for 5 minutes, 25 cm^3 of water are added. After this, it is left standing for half an hour, then the liberated iodine is titrated with a decinormal solution of sodium thiosulphate, no indicator being added; complete discoloration indicates the end of the reaction. If n is the number of cm^3 of thiosulphate solution required, the percentage of peroxide (calculated as H_2O_2) present in the sample is obtained by the formula

$$\frac{17n}{100p}$$

2.3.4. *Test for determining fluidity*

To determine the fluidity of liquid, viscous or pasty substances and mixtures, the following test method shall be used.

2.3.4.1. Test apparatus

Commercial penetrometer conforming to ISO Standard 2137-1985, with a guide rod of 47,5 g ± 0,05 g; sieve disc of duralumin with conical bores and a mass of 102,5 g ± 0,05 g (see Figure 1); penetration vessel with an inside diameter of 72 mm to 80 mm for reception of the sample.

2.3.4.2. Test procedure

The sample is poured into the penetration vessel not less than half an hour before the measurement. The vessel is then hermetically closed and left standing until the measurement. The sample in the hermetically closed penetration vessel is heated to 35 °C ± 0,5 °C and is placed on the penetrometer table immediately prior to measurement (not more than two minutes). The point S of the sieve disc is then brought into contact with the surface of the liquid and the rate of penetration is measured.

2.3.4.3. Evaluation of test results

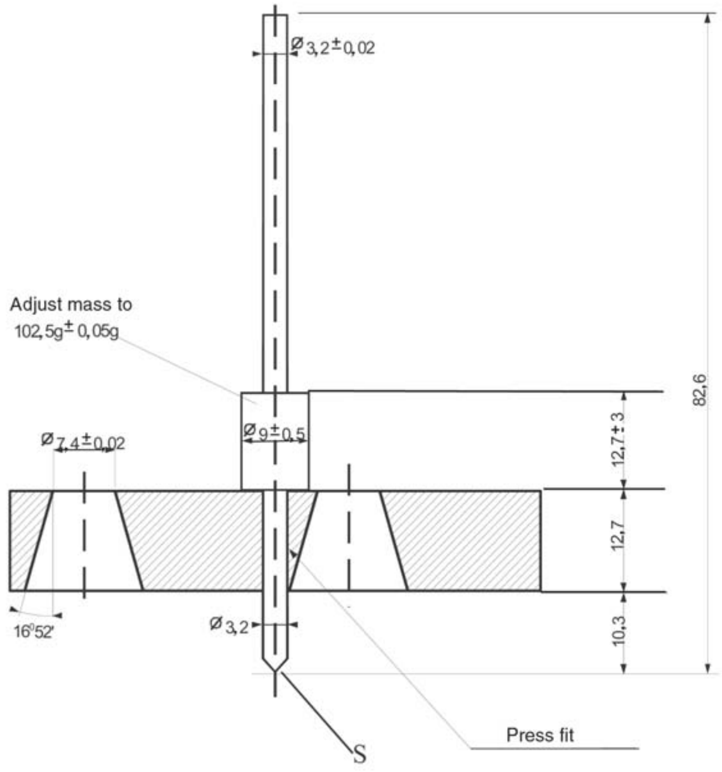
A substance is pasty if, after the centre S has been brought into contact with the surface of the sample, the penetration indicated by the dial gauge:

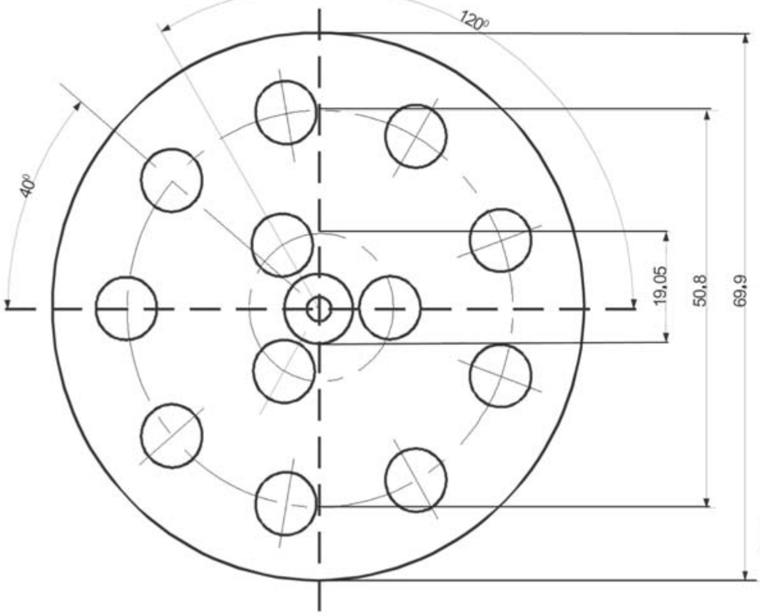
(a) after a loading time of 5 s ± 0,1 s, is less than 15,0 mm ± 0,3 mm; or

(b) after a loading time of 5 s ± 0,1 s, is greater than 15,0 mm ± 0,3 mm, but the additional penetration after another 55 s ± 0,5 s is less than 5,0 mm ± 0,5 mm.

NOTE: In the case of samples having a flow point, it is often impossible to produce a steady level surface in the penetration vessel and, hence, to establish satisfactory initial measuring conditions for the contact of the point S. Furthermore, with some samples, the impact of the sieve disc can cause an elastic deformation of the surface and, in the first few seconds, simulate a deeper penetration. In all these cases, it may be appropriate to make the evaluation in (b).

Figur 1 – Penetrometer





Tolerances not specified are ± 0,1 mm

2.3.5. *Test for determining the ecotoxicity, persistence and bioaccumulation of substances in the aquatic environment for assignment to Class 9*

NOTE: The test methods used shall be those adopted by the Organization for Economic Cooperation and Development (OECD) and the European Commission (EC). If other methods are used, they shall be internationally recognized, be equivalent to the OECD/EC tests and be referenced in test reports.

2.3.5.1. Acute toxicity for fish

The object is to determine the concentration which causes 50 % mortality in the test species; this is the (LC_{50}) value, namely, the concentration of the substance in water which will cause the death of 50 % of a test group of fish during a continuous period of testing of at least 96 hours. Appropriate types of fish include: striped brill (*Brachydanio rerio*), fathead minnow (*Pimephales promelas*) and rainbow trout (*Oncorhynchus mykiss*).

The fish are exposed to the test substance added to the water in varying concentrations (+1 control). Observations are recorded at least every 24 hours. At the end of the 96-hour activity and, if possible, at each observation, the concentration causing the death of 50 % of the fish is calculated. The no observed effect concentration (NOEC) at 96 hours is also determined.

2.3.5.2. Acute toxicity for daphnia

The object is to determine the effective concentration of the substance in water which renders 50 % of the daphnia unable to swim (EC_{50}). The appropriate test organisms are *daphnia magna* and *daphnia pulex*. The daphnia are exposed for 48 hours to the test substance added to the water in varying concentrations. The no observed effect concentration (NOEC) at 48 hours is also determined.

2.3.5.3. Algal growth inhibition

The object is to determine the effect of a chemical on the growth of algae under standard conditions. The change in biomass and the rate of growth with algae under the same conditions, but without the presence of the test chemical, are compared over 72 hours. The results are expressed as the effective concentration which reduces the rate of algal growth by 50 %, IC_{50r}, and also the formation of the biomass, IC_{50b}.

2.3.5.4. Tests for ready biodegradability

The object is to determine the degree of biodegradation under standard aerobic conditions. The test substance is added in low concentrations to a nutrient solution containing aerobic bacteria. The progress of degradation is followed for 28 days by determining the parameter specified in the test method used. Several equivalent test methods are available.

The parameters include reduction of dissolved organic carbon (DOC),

carbon dioxide (CO_2),

generation of oxygen (O_2) depletion.

A substance is considered to be readily biodegradable if within not more than 28 days the following criteria are satisfied-within 10 days from when degradation first reaches 10 %:

Reduction of DOC: 70 %

Generation of CO_2: 60 % of theoretical CO_2 production

Depletion of O_2: 60 % of theoretical O_2 requirement.

The test may be continued beyond 28 days if the above criteria are not satisfied, but the result will represent the inherent biodegradability of the test substance. For assignment purposes, the ‘ready’ result is normally required.

Where only COD and BOD_5 data are available, a substance is considered to be readily biodegradable if:

$$\frac{BOD_5}{COD} \geq 0{,}5$$

BOD (Biochemical Oxygen Demand) is defined as the mass of dissolved oxygen required by a specific volume of solution of the substance for the process of biochemical oxidation under prescribed conditions. The result is expressed as grams of BOD per gram of test substance. The normal test period is five days (BOD_5) using a national standard test procedure.

COD (Chemical Oxygen Demand) is a measure of the oxidizability of a substance, expressed as the equivalent amount in oxygen of an oxidizing reagent consumed by the substance under fixed laboratory conditions. The results are expressed in grams of COD per gram of substance. A national standard procedure may be used.

2.3.5.5. Tests for bioaccumulation potential

2.3.5.5.1. The object is to determine the potential for bioaccumulation either by the ratio at equilibrium of the concentration (c) of a substance in a solvent to that in water or by the bioconcentration factor (BCF).

2.3.5.5.2. The ratio at equilibrium of the concentration (c) of a substance in a solvent to that in water is normally expressed as a $\log_{10}$. The solvent and water shall have negligible miscibility and the substance shall not ionize in water. The solvent normally used is n-octanol.

In the case of n-octanol and water, the result is:

$$\log P_{ow} = \log_{10} [c_o/c_w]$$

where P_{ow} is the partition coefficient obtained by dividing the concentration of the substance in n-octanol (c_o) by the concentration of the substance in water (c_w). If $\log P_{ow} \geq 3{,}0$ then the substance has a potential to bioaccumulate.

2.3.5.5.3. The bioconcentration factor (BCF) is defined as the ratio of the concentration of the test substance in the test fish (c_f) to the concentration in the test water (c_w) at steady state:

$$BCF=(c_f)/(c_w)$$

The principle of the test involves exposing fish to a solution or dispersion at known concentrations of the test substance in water. Continuous flow, static or semi-static procedures may be used according to the test procedure selected, based on the properties of the test substances. Fish are exposed to the test substances over a given period of time, followed by a period of no further exposure. During the second period, measurements are made of the rate of increase in the water of the test substance (i.e. the rate of excretion or depuration).

(Full details of the various test procedures and the calculation method for the BCF are given in the OECD Guidelines for Testing of Chemicals, methods 305A to 305E, 12 May 1981).

2.3.5.5.4. A substance may have a $\log P_{ow}$ greater than 3 and a BCF less than 100 which would indicate little or no potential to bioaccumulate. In cases of doubt, the BCF value takes precedence over $\log P_{ow}$, as indicated in the flow chart of the Procedure in 2.3.5.7.

2.3.5.6. Criteria

A substance may be regarded as a pollutant to the aquatic environment if it satisfies one of the following criteria:

The lowest of the values of

the 96-hour LC_{50} for fish,

the 48-hour EC_{50} for daphnia or

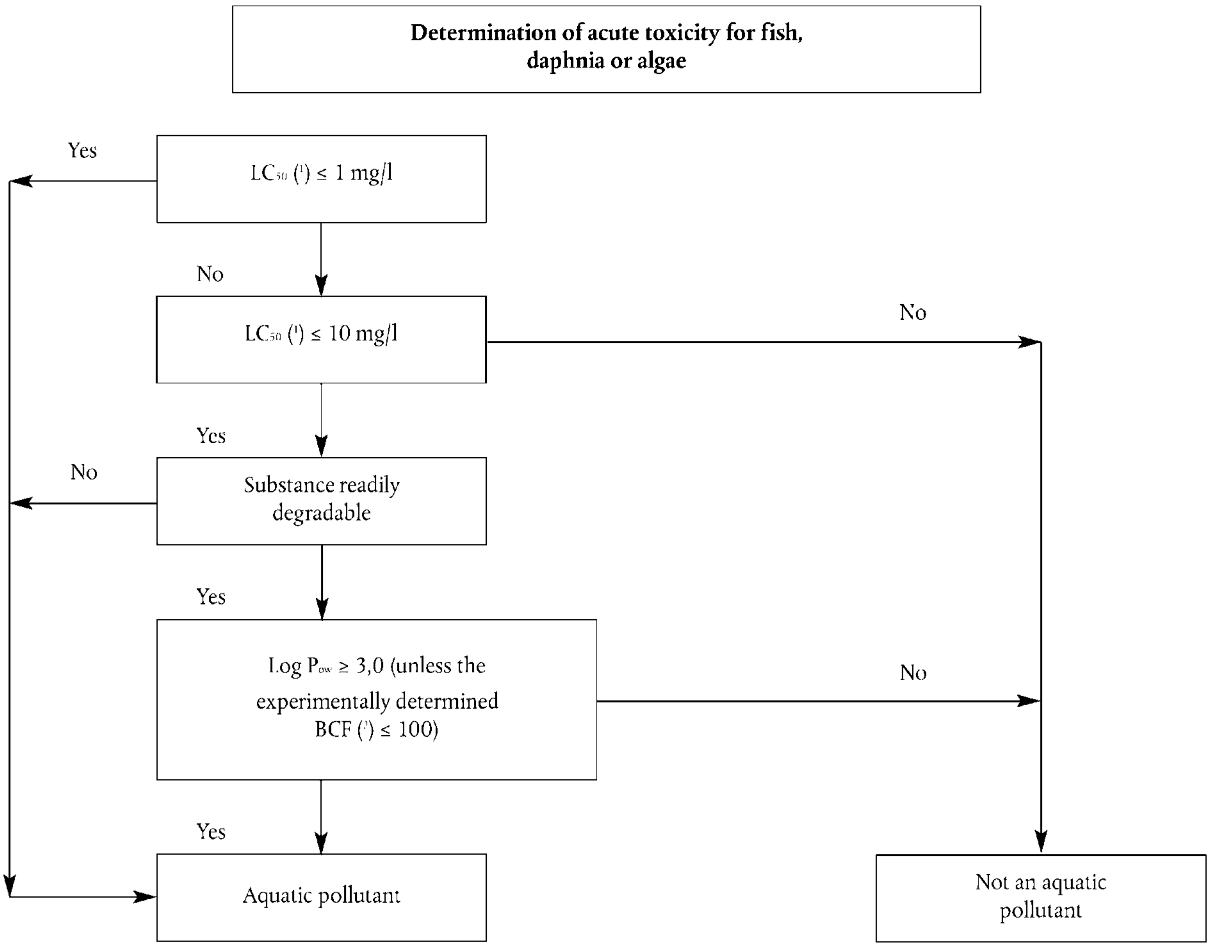
the 72-hour IC_{50} for algae:

— is less than or equal to 1 mg/l;

— is greater than 1 mg/l but less than or equal to 10 mg/l, and the substance is not biodegradable;

— is greater than 1 mg/l but less than or equal to 10 mg/l, and the log P_{ow} is greater than or equal to 3,0 (unless the experimentally determined BCF is less than or equal to 100).

2.3.5.7 Procedure to be followed



(1) Lowest value of 96-hour LC_{50}, 48-hour EC_{50} or 72-hour IC_{50} as appropriate.

(2) BCF = bioconcentration factor.

Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND EXEMPTIONS RELATED TO DANGEROUS GOODS PACKED IN LIMITED QUANTITIES

CHAPTER 3.1

General

3.1.1. *Introduction*

In addition to the requirements referred to or given in the tables of this Part, the general requirements of each Part, Chapter and/or Section are to be observed. These general requirements are not given in the tables. When a general requirement is contradictory to a special requirement, the special requirement prevails.

3.1.2. *Proper shipping name*

3.1.2.1. The proper shipping name is that portion of the entry most accurately describing the goods in table A in Chapter 3.2, which is shown in upper case characters (plus any numbers, Greek letters, 'sec', 'tert', and the letters m, n, o, p, which form an integral part of the name). An alternative proper shipping name may be shown in brackets following the main proper shipping name (e.g. ETHANOL (ETHYL ALCOHOL)). Portions of an entry appearing in lower case need not be considered as part of the proper shipping name.

3.1.2.2. When conjunctions such as 'and' or 'or' are in lower case or when segments of the name are punctuated by commas, the entire name of the entry need not necessarily be shown in the consignment note or package markings. This is the case particularly when a combination of several distinct entries are listed under a single UN Number. Examples illustrating the selection of the proper shipping name for such entries are:

(a) UN 1057 LIGHTERS or LIGHTER REFILLS — The proper shipping name is the most appropriate of the following possible combinations:

— LIGHTERS

— LIGHTER REFILLS;

(b) UN 3207 ORGANOMETALLIC COMPOUND or COMPOUND SOLUTION or COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S. The proper shipping name is the most appropriate of the following possible combinations:

— ORGANOMETALLIC COMPOUND, WATER-REACTIVE, FLAMMABLE, N.O.S.

— ORGANOMETALLIC COMPOUND SOLUTION, WATER-REACTIVE, FLAMMABLE, N.O.S.

— ORGANOMETALLIC COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.

each supplemented with the technical name of the goods (see 3.1.2.6.1).

3.1.2.3. Proper shipping names may be used in the singular or plural as appropriate. In addition, when qualifying words are used as part of the proper shipping name, their sequence on the consignment note or package markings is optional. For instance, 'Dimethylamine aqueous solution' may alternatively be shown as 'aqueous solution of dimethylamine'. Commercial or military names for goods of Class 1 which contain the proper shipping name supplemented by additional descriptive text may be used.

3.1.2.4. Unless it is already included in capital letters in the name indicated in table A in Chapter 3.2, the qualifying word 'LIQUID' or 'SOLID', as appropriate, shall be added as part of the proper shipping name when a substance specifically listed by name may, due to the differing physical states of the various isomers of the substance, be either a liquid or a solid (e.g. DINITROTOLUENES, LIQUID; DINITROTOLUENES, SOLID).

3.1.2.5. Unless it is already included in capital letters in the name indicated in table A in Chapter 3.2, the qualifying word 'MOLTEN' shall be added as part of the proper shipping name when a substance, which is a solid in accordance with the definition in 1.2.1, is carried or handed over for carriage in the molten state (e.g. ALKYLPHENOL, SOLID, N.O.S., MOLTEN).

3.1.2.6. Names of generic or 'not otherwise specified' (N.O.S.) entries

3.1.2.6.1. For the purposes of documentation and marking of packages, when an 'N.O.S.' or 'generic' proper shipping name is used, the proper shipping name shall be supplemented with the technical name of the goods, unless a national law or international convention prohibits its disclosure if it is a controlled substance. The particular 'N.O.S.' or 'generic' entries for which this supplementary information is considered necessary have been allocated Special Provision 274 in column (6) of table A in Chapter 3.2.

3.1.2.6.1.1. The technical name (see definition in 1.2.1) shall be shown immediately following the proper shipping name. Trade names shall not be used for this purpose. In the case of pesticides, only ISO common name(s), other name(s) in the WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification, or the name(s) of the active substance(s) may be used. It shall be a recognized chemical name or another name currently used in scientific and technical handbooks, journals and texts.

3.1.2.6.1.2. When a mixture of dangerous goods is described by one of the 'N.O.S.' or 'generic' entries to which Special Provision 274 has been allocated in column (6) of table A in Chapter 3.2, not more than the two constituents which most predominantly contribute to the hazard or hazards of a mixture need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention. If a package containing a mixture is labelled with any subsidiary risk label, one of the two technical names shown in parentheses shall be the name of the constituent which compels the use of the subsidiary risk label.

NOTE: see 5.4.1.2.2

3.1.2.6.1.3. Examples illustrating the selection of the proper shipping name supplemented with the technical name of goods for such N.O.S. entries are:

UN 2003 METAL ALKYL, N.O.S. (trimethylgallium)

UN 2902 PESTICIDE, LIQUID, TOXIC, N.O.S. (drazoxolon).

3.1.2.7. Mixtures and solutions containing one dangerous substance

When mixtures and solutions have to be regarded as the dangerous substance listed by name in accordance with the classification requirements of 2.1.3.3, the qualifying word 'SOLUTION' or 'MIXTURE', as appropriate, shall be added as part of the proper shipping name, e.g. 'ACETONE SOLUTION'. In addition, the concentration of the solution or mixture may also be indicated, e.g. 'ACETONE 75 % SOLUTION'.

CHAPTER 3.2

List of dangerous goods in UN number order

3.2.1. *Explanations concerning table A: List of dangerous goods in UN number order*

As a rule, each row of table A in this Chapter deals with the substance(s) or article(s) covered by a specific UN number. However, when substances or articles belonging to the same UN number have different chemical properties, physical properties and/or transport conditions, several consecutive rows may be used for that UN number.

Each column of table A is dedicated to a specific subject as indicated in the explanatory notes below. The intersection of columns and rows contains information concerning the subject treated in that column, for the substance(s) or article(s) of that row:

— the first four cells identify the substance(s) or article(s) belonging to that row (additional information in that respect may be given by the special requirements referred to in column (6));

— the following cells give the applicable special requirements, either in the form of complete information or in coded form. The codes cross-refer to detailed information that is to be found in the Part, Chapter, Section and/or Sub-section indicated in the explanatory notes below. An empty cell means either that there is no special requirement and that only the general requirements apply, or that the transport restriction indicated in the explanatory notes is in force.

The applicable general requirements are not referred to in the corresponding columns. The explanatory notes below indicate for every column the Part(s), Chapter(s), Section(s) and/or Sub-section(s) where these are to be found.

Explanatory notes for each column:

Column (1) *UN-number*

Contains the UN number:

— of the dangerous substance or article if this substance or article has been assigned its own specific UN number (see alphabetical list), or

— of the generic or n.o.s. entry to which dangerous substances or articles not mentioned by name are to be assigned in accordance with the criteria ('decision trees') of Part 2.

Column (2) *Name and description*

Contains, in upper case characters, the name of the substance or article if the substance or article has been assigned to a specific UN number, or of the generic or n.o.s. entry to which the dangerous substance or article has been assigned in accordance with the criteria ('decision trees') of Part 2 This name shall be used as the proper shipping name or, if necessary, as part of the proper shipping programme (see 3.1.2 for further details on proper shipping name).

A descriptive text in lower case characters is added after the proper shipping name to clarify the scope of the entry if the classification and/or transport conditions of the substance or article may be different under certain conditions.

Column (3a) *Class*

Contains the number of the Class, whose heading covers the dangerous substance or article. This Class number is assigned in accordance with the procedures and criteria of Part 2.

Column (3b) *Classification code*

Contains the classification code of the dangerous substance or article:

— For dangerous substances or articles of Class 1, the code consists of a division number and compatibility group letter, which are assigned in accordance with the procedures and criteria of 2.2.1.1.4.

— For dangerous substances or articles of Class 2, the code consists of a number and one or more letters denoting the hazardous property group, which are explained in 2.2.2.1.2 and 2.2.2.1.3.

— For dangerous substances or articles of classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 8 and 9, the codes are explained in 2.2.x.1.2. ([1]).

— Dangerous substances or articles of Class 7 do not have a classification code.

Column (4) *Packing group*

Contains the packing group number(s) (I, II or III) assigned to the dangerous substance. These packing group numbers are assigned on the basis of the procedures and criteria of Part 2. Certain articles and substances are not assigned to packing groups.

Column (5) *Labels*

Contains the model number of the labels/placards (see 5.2.2.2 and 5.3.1.7) that have to be affixed to packages, containers, tank-containers, portable tanks, MEGCs, tank wagons, wagons with demountable tanks, battery wagons and wagons.

The shunting labels in accordance with models Nos 13 and 15 (see 5.3.4) indicated in brackets for some substances shall only be affixed in the following cases:

— Class 1 on both sides of wagons which comprise a wagon load.

— Class 2 on both sides of tank wagons, battery wagons, wagons with demountable tanks and wagons carrying tank-containers, MEGCs and swap tanks.

([1]) x = the Class number of the dangerous substance or article, without dividing point if applicable.

However:

— for substances or articles of Class 7, 7X means label model No.7A, 7B or 7C as appropriate according to the category (see 2.2.7.8.4 and 5.2.2.1.11.1) or placard No. 7D (see 5.3.1.1.3 and 5.3.1.7.2);

— labels of model number 11 are not indicated in this column; 5.2.2.1.12 is to be consulted in every case.

The general requirements on labelling/placarding (e.g. number of labels, their location) are to be found in 5.2.2.1 for packages and small containers, and in 5.3.1 for large containers, tank-containers, MEGCs, portable tanks, tank wagons, wagons with demountable tanks, battery wagons and wagons.

NOTE: Special requirements, indicated in column (6), may change the above labelling requirements.

Column (6) *Special requirements*

Contains the numeric codes of special requirements that have to be met. These requirements concern a wide array of subjects, mainly connected with the contents of columns (1) to (5) (e.g. transport prohibitions, exemptions from requirements, explanations concerning the classification of certain forms of the dangerous goods concerned and additional labelling or marking requirements), and are listed in Chapter 3.3 in numerical order. If column (6) is empty, no special requirements apply to the contents of columns (1) to (5) for the dangerous goods concerned.

Column (7) *Limited quantities*

Contains an alphanumeric code with the following meaning:

— LQ 0 signifies that no exemption from the requirements of this Directive exists for the dangerous goods packed in limited quantities;

— All the other LQ codes signify that the requirements of this Directive are not applicable if the conditions indicated in Chapter 3.4 are fulfilled (general conditions of 3.4.1 and conditions of 3.4.3, 3.4.4, 3.4.5 or 3.4.6 for the relevant code).

Column (8) *Packing instructions*

Contains the alphanumeric codes of the applicable packing instructions:

— alphanumeric codes starting with the letter 'P', which refer to packing instructions for packagings and receptacles (except IBCs and large packagings), or 'R', which refer to packing instructions for light gauge metal packagings. These are listed in 4.1.4.1 in numerical order, and specify the packagings and receptacles that are authorized. They also indicate which of the general packing requirements of 4.1.1, 4.1.2 and 4.1.3, and which of the special packing requirements of 4.1.5, 4.1.6, 4.1.7, 4.1.8 and 4.1.9 have to be met. If column (8) does not contain a code starting with the letters 'P' or 'R', the dangerous goods concerned cannot be carried in packagings;

— alphanumeric codes starting with the letters 'IBC' refer to packing instructions for IBCs. These are listed in 4.1.4.2 in numerical order, and specify the IBCs that are authorized. They also indicate which of the general packing requirements of 4.1.1, 4.1.2 and 4.1.3, and which of the special packing requirements of 4.1.5, 4.1.6, 4.1.7, 4.1.8 and 4.1.9 have to be met. If column (8) does not contain a code starting with the letters 'IBC', the dangerous goods concerned cannot be carried in IBCs;

— alphanumeric codes starting with the letters 'LP' refer to packing instructions for large packagings. These are listed in 4.1.4.3 in numerical order, and specify the large packagings that are authorized. They also indicate which of the general packing requirements of 4.1.1, 4.1.2 and 4.1.3, and which of the special packing requirements of 4.1.5, 4.1.6, 4.1.7, 4.1.8 and 4.1.9 have to be met. If column (8) does not contain a code starting with the letters 'LP', the dangerous goods concerned cannot be carried in large packagings;

— alphanumerical codes starting with letters 'PR' refer to packing instructions for particular pressure receptacles. These are listed in 4.1.4.4 in numerical order, and specify the pressure receptacles that are authorized. They also indicate which of the general packing requirements of 4.1.1, 4.1.2 and 4.1.3, and which of the special packing requirements of 4.1.5, 4.1.6, 4.1.7, 4.1.8 and 4.1.9 have to be met.

NOTE: Special packing requirements, indicated in column (9a), may change the above packing instructions.

Column (9a) *Special packing requirements*

Contains the alphanumeric codes of the applicable special packing requirements:

— alphanumeric codes starting with the letters 'PP' or 'RR' refer to special packing requirements for packagings and receptacles (except IBCs and large packagings) that have additionally to be met. These are to be found in 4.1.4.1, at the end of the relevant packing instruction (with the letter 'P' or 'R') referred to in column (8). If column (9a) does not contain a code starting with the letters 'PP' or 'RR', none of the special packing requirements listed at the end of the relevant packing instruction apply;

— alphanumeric codes starting with the letter 'B' refer to special packing requirements for IBCs that have additionally to be met. These are to be found in 4.1.4.2, at the end of the relevant packing instruction (with the letters 'IBC') referred to in column (8). If column (9a) does not contain a code starting with the letter 'B', none of the special packing requirements listed at the end of the relevant packing instruction apply;

— alphanumeric codes starting with the letter 'L' refer to special packing requirements for large packagings that have additionally to be met. These are to be found in 4.1.4.3, at the end of the relevant packing instruction (with the letters 'LP') referred to in column (8). If column (9a) does not contain a code starting with the letter 'L', none of the special packing requirements listed at the end of the relevant packing instruction apply.

Column (9b) *Special requirements for mixed packaging*

Contains the alphanumeric codes beginning with the letters 'MP' of the applicable special requirements for mixed packing. These special requirements are listed in 4.1.10 in numerical order. If column (9b) does not contain a code beginning with the letters 'MP', only the general requirements apply (see 4.1.1.5 and 4.1.1.6).

Column (10) *Portable tanks instructions*

Contains an alphanumeric code assigned to a portable tank instruction, in accordance with 4.2.4.2.1 to 4.2.4.2.4 and 4.2.4.2.6 . This portable tank instruction corresponds to the least stringent requirements that are acceptable for the carriage of the substance in portable tanks. The codes identifying the other portable tank instructions that are also permitted for the carriage of the substance are to be found in 4.2.4.2.5. If no code is given, carriage in portable tanks is not permitted unless a competent authority approval is granted as detailed in 6.7.1.3.

The general requirements for the design, construction, equipment, type approval, testing and marking of portable tanks are to be found in Chapter 6.7. The general requirements for use (e.g. filling) are to be found in 4.2.1 to 4.2.3.

NOTE: Special requirements, indicated in column (11), may change the above requirements.

Column (11) *Portable tank special requirements*

Contains the alphanumeric codes of the portable tank special requirements that have additionally to be met. These codes, starting with the letters 'TP' refer to special requirements for the construction or use of these portable tanks. They are to be found in 4.2.4.3.

Column (12) *Tank codes for RID tanks*

Contains an alphanumeric code describing a tank type, in accordance with 4.3.3.1.1 (for gases of Class 2) or 4.3.4.1.1 (for substances of classes 3 to 9). This tank type corresponds to the least stringent tank requirements that are acceptable for the carriage of the relevant substance in RID tanks. The codes describing the other permitted tank types are to be found in 4.3.3.1.2 (for gases of Class 2) or 4.3.4.1.2 (for substances of classes 3 to 9). If no code is given, carriage in RID tanks is not permitted.

If in this column a tank code for solids (S) and for liquids (L) is indicated, this means that this substance may be carried in the solid or the liquid (molten) state. In general this requirement is applicable to substances having a melting point from 20 °C to 180 °C.

The general requirements for the construction, equipment, type approval, testing and marking that are not indicated in the tank type are to be found in 6.8.1, 6.8.2, 6.8.3 and 6.8.5. The general requirements for the use (e.g. maximum degree of filling, minimum testpressure) are to be found in 4.3.1 to 4.3.4.

The indication (M) after the tank code means that the substance can also be carried in battery-wagons or MEGCs.

The indication (+) after the tank code means that the alternative use of tanks and the hierarchy of 4.3.4.1.2 is not applicable (see also 4.3.4.1.3).

For fibre-reinforced plastic tank-containers, see 4.4.1 and Chapter 6.9.

NOTE: Special requirements, indicated in column (13), may change the above requirements.

Column (13) *Special requirements for RID tanks*

Contains the alphanumeric codes of the special requirements for RID tanks that have additionally to be met:

— alphanumeric codes starting with the letters 'TU' refer to special requirements for the use of these tanks. These are to be found in 4.3.5.

— alphanumeric codes starting with the letters 'TC' refer to special requirements for the construction of these tanks. These are to be found in 6.8.4(a).

— alphanumeric codes starting with the letters 'TE' refer to special requirements concerning the items of equipment of these tanks. These are to be found in 6.8.4(b).

— alphanumeric codes starting with the letters 'TA' refer to special requirements for the type approval of these tanks. These are to be found in 6.8.4(c).

— alphanumeric codes starting with the letters 'TT' refer to special requirements for the testing of these tanks. These are to be found in 6.8.4(d).

— alphanumeric codes starting with the letters 'TM' refer to special requirements for the marking of these tanks. These are to be found in 6.8.4(e).

Column (14) (Reserved)

Column (15) *Transport category*

Contains a number indicating the transport category to which the substance or article is assigned for the purpose of exemption from transport operations performed by undertakings in connection with their main business. (See 1.1.3.1(c)).

Column (16) *Special requirements for carriage in packages*

Contains alphanumeric codes beginning with the letter 'W' for the requirements for carriage in packages (where applicable). These requirements are listed in in 7.2.4. The general requirements for carriage in packages are given in Chapters 7.1 and 7.2

NOTE: In addition the special requirements for loading, unloading and handling in column (18) shall be observed.

Column (17) *Special requirements for carriage in bulk*

Contains alphanumeric codes for the requirements applicable to carriage in bulk. These codes, beginning with the letters 'VW' are listed in numerical order in 7.3.3. When column 17 does not contain a code beginning with the letters 'VW', the dangerous goods concerned may not be carried in bulk.

Column (18) *Special requirements for carriage, loading, unloading and handling*

Contains alphanumeric codes beginning with the letters 'CW' for the requirements applicable to loading, unloading and handling. These requirements are given in 7.5.11. When column 18 does not contain a code only the general requirements apply (see 7.5.1 to 7.5.4 and 7.5.8).

Column (19) *Colis Express (express goods)*

Contains alphanumeric codes beginning with the letters 'CE' for the requirements applicable to forwarding as Colis Express (express goods). These requirements are given in Chapter 7.6. When column 19 does not contain a code, forwarding as Colis Express (express goods) is not permitted.

Column (20) *Hazard identification number*

Contains a two or three figure number (preceded in certain cases by the letter 'x') for substances and articles of classes 2 to 9, and for substances and articles of Class 1, the classification code (see column (3b)). In the cases described in 5.3.2.1, this number shall appear in the upper half of the orange-coloured marking. The meaning of the hazard identification numbers is described in 5.3.2.3.

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0004	AMMONIUM PICRATE dry or wetted with less than 10 % water, by mass	1	1.1D		1 (+13)		LQ0	P112(a) P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0005	CARTRIDGES FOR WEAPONS with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0006	CARTRIDGES FOR WEAPONS	1	1.1E		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1E
0007	CARTRIDGES FOR WEAPONS with bursting charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F
0009	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1	1.2G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2G
0010	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1	1.3G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0012	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1	1.4S		1.4		LQ0	P130		MP23 MP24					4	W2		CW1	CE1	1.4S

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0014	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1	1.4S		1.4		LQ0	P130		MP23 MP24					4	W2		CW1	CE1	1.4S
0015	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1	1.2G		1+8	204	LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2G
0016	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1	1.3G		1+8	204	LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0018	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1	1.2G		1+6.1+8		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1 CW28		1.2G
0019	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1	1.3G		1+6.1+8		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1 CW28		1.3G
0020	AMMUNITION, TOXIC with burster, expelling charge or propelling charge	1	1.2K	PROHIBITED																
0021	AMMUNITION, TOXIC with burster, expelling charge or propelling charge	1	1.3K	PROHIBITED																

UN Num-ber	Name and description	Class	Classifi-cation Code	Packing Group	Labels	Special Pro-visions	Limited Quan-tities	Packaging			Portable tanks		RID tanks		Trans-port Cat-egory	Special transport provisions			Colis Express	Hazard Identifi-cation Number
								Instruc-tions	Special Pro-visions	Mixed Packing	Tank Instruc-tions	Special Pro-visions	Tank Code	Special Pro-visions		Packages	Bulk	Loading, unload-ing & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0027	BLACK POWDER (GUNPOWDER), granular or as a meal	1	1.1D		1 (+13)		LQ0	P113	PP50	MP20 MP24					1	W2 W3		CW1		1.1D
0028	BLACK POWDER (GUNPOWDER), COMPRESSED or BLACK POWDER (GUNPOWDER), IN PELLETS	1	1.1D		1 (+13)		LQ0	P113	PP51	MP20 MP24					1	W2		CW1		1.1D
0029	DETONATORS, NON-ELECTRIC for blasting	1	1.1B		1 (+13)		LQ0	P131	PP68	MP23					1	W2		CW1		1.1B
0030	DETONATORS, ELECTRIC for blasting	1	1.1B		1 (+13)		LQ0	P131		MP23					1	W2		CW1		1.1B
0033	BOMBS with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0034	BOMBS with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0035	BOMBS with bursting charge	1	1.2D		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2D
0037	BOMBS, PHOTO-FLASH	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0038	BOMBS, PHOTO-FLASH	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0039	BOMBS, PHOTO-FLASH	1	1.2G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2G
0042	BOOSTERS without detonator	1	1.1D		1 (+13)		LQ0	P132		MP21					1	W2		CW1		1.1D
0043	BURSTERS, explosive	1	1.1D		1 (+13)		LQ0	P133	PP69	MP21					1	W2		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0044	PRIMERS, CAP TYPE	1	1.4S		1.4		LQ0	P133		MP23 MP24					4	W2		CW1	CE1	1.4S
0048	CHARGES, DEMOLITION	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0049	CARTRIDGES, FLASH	1	1.1G		1 (+13)		LQ0	P135		MP23					1	W2		CW1		1.1G
0050	CARTRIDGES, FLASH	1	1.3G		1		LQ0	P135		MP23					1	W2		CW1		1.3G
0054	CARTRIDGES, SIGNAL	1	1.3G		1		LQ0	P135		MP23 MP24					1	W2		CW1		1.3G
0055	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1	1.4S		1.4		LQ0	P136		MP23					4	W2		CW1	CE1	1.4S
0056	CHARGES, DEPTH	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0059	CHARGES, SHAPED without detonator	1	1.1D		1 (+13)		LQ0	P137	PP70	MP21					1	W2		CW1		1.1D
0060	CHARGES, SUPPLEMENTARY, EXPLOSIVE	1	1.1D		1 (+13)		LQ0	P132		MP21					1	W2		CW1		1.1D
0065	CORD, DETONATING, flexible	1	1.1D		1 (+13)		LQ0	P139	PP71 PP72	MP21					1	W2		CW1		1.1D
0066	CORD, IGNITER	1	1.4G		1.4		LQ0	P140		MP23					2	W2		CW1	CE1	1.4G
0070	CUTTERS, CABLE, EXPLOSIVE	1	1.4S		1.4		LQ0	P134 LP102		MP23					4	W2		CW1	CE1	1.4S

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0072	CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX), WETTED with not less than 15 % water, by mass	1	1.1D		1 (+15)	266	LQ0	P112(a)	PP45	MP20					1	W2		CW1		1.1D
0073	DETONATORS FOR AMMUNITION	1	1.1B		1 (+13)		LQ0	P133		MP23					1	W2		CW1		1.1B
0074	DIAZODINITROPHENOL, WETTED with not less than 40 % water, or mixture of alcohol and water, by mass	1	1.1A	PROHIBITED																
0075	DIETHYLENEGLYCOL DINITRATE, DESENSITIZED with not less than 25 % non-volatile, water-insoluble phlegmatizer, by mass	1	1.1D		1 (+15)	266	LQ0	P115	PP53 PP54 PP57 PP58	MP20					1	W2		CW1		1.1D
0076	DINITROPHENOL, dry or wetted with less than 15 % water, by mass	1	1.1D		1+6.1 (+13)		LQ0	P112(a) P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1 CW28		1.1D
0077	DINITROPHENOLATES, alkali metals, dry or wetted with less than 15 % water, by mass	1	1.3C		1+6.1 (+13)		LQ0	P114(a) P114(b)	PP26	MP20					1	W2 W3		CW1 CW28		1.3C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0078	DINITRORESORCINOL, dry or wetted with less than 15 % water, by mass	1	1.1D		1 (+13)		LQ0	P112(a) P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0079	HEXANITRODIPHENYLAMINE (DIPICRYLAMINE; HEXYL)	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0081	EXPLOSIVE, BLASTING, TYPE A	1	1.1D		1 (+13)	616 617	LQ0	P116	PP63 PP66	MP20					1	W2 W3		CW1		1.1D
0082	EXPLOSIVE, BLASTING, TYPE B	1	1.1D		1 (+13)	617	LQ0	P116 IBC100	PP61 PP62 PP65 B9	MP20					1	W2 W3		CW1		1.1D
0083	EXPLOSIVE, BLASTING, TYPE C	1	1.1D		1 (+15)	267 617	LQ0	P116		MP20					1	W2 W3		CW1		1.1D
0084	EXPLOSIVE, BLASTING, TYPE D	1	1.1D		1 (+13)	617	LQ0	P116		MP20					1	W2		CW1		1.1D
0092	FLARES, SURFACE	1	1.3G		1		LQ0	P135		MP23					1	W2		CW1		1.3G
0093	FLARES, AERIAL	1	1.3G		1		LQ0	P135		MP23					1	W2		CW1		1.3G
0094	FLASH POWDER	1	1.1G		1 (+13)		LQ0	P113	PP49	MP20					1	W2 W3		CW1		1.1G
0099	FRACTURING DEVICES, EXPLOSIVE without detonator, for oil wells	1	1.1D		1 (+13)		LQ0	P134 LP102		MP21					1	W2		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0101	FUSE, NON-DETONATING	1	1.3G		1		LQ0	P140	PP74 PP75	MP23					1	W2		CW1		1.3G
0102	CORD (FUSE), DETONATING, metal clad	1	1.2D		1		LQ0	P139	PP71	MP21					1	W2		CW1		1.2D
0103	FUSE, IGNITER, tubular, metal clad	1	1.4G		1.4		LQ0	P140		MP23					2	W2		CW1		1.4G
0104	CORD (FUSE), DETONATING, MILD EFFECT, metal clad	1	1.4D		1.4		LQ0	P139	PP71	MP21					2	W2		CW1		1.4D
0105	FUSE, SAFETY	1	1.4S		1.4		LQ0	P140	PP73	MP23					4	W2		CW1	CE1	1.4S
0106	FUZES, DETONATING	1	1.1B		1 (+13)		LQ0	P141		MP23					1	W2		CW1		1.1B
0107	FUZES, DETONATING	1	1.2B		1 (+13)		LQ0	P141		MP23					1	W2		CW1		1.2B
0110	GRENADES, PRACTICE, hand or rifle	1	1.4S		1.4		LQ0	P141		MP23					4	W2		CW1	CE1	1.4S
0113	GUANYLNITROSAMINO-GUANYLIDENE HYDRA-ZINE, WETTED with not less than 30 % water, by mass	1	1.1A	PROHIBITED																
0114	GUANYLNITROSAMINO-GUANYLTETRAZENE (TETRAZENE), WETTED with not less than 30 % water, or mixture of alcohol and water, by mass	1	1.1A	PROHIBITED																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0118	HEXOLITE (HEXOTOL), dry or wetted with less than 15 % water, by mass	1	1.1D		1 (+13)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0121	IGNITERS	1	1.1G		1 (+13)		LQ0	P142		MP23					1	W2		CW1		1.1G
0124	JET PERFORATING GUNS, CHARGED, oil well, without detonator	1	1.1D		1 (+13)		LQ0	P101		MP21					1	W2		CW1		1.1D
0129	LEAD AZIDE, WETTED with not less than 20 % water, or mixture of alcohol and water, by mass	1	1.1A	PROHIBITED																
0130	LEAD STYPHNATE (LEAD TRINITRORESORCINATE), WETTED with not less than 20 % water, or mixture of alcohol and water, by mass	1	1.1A	PROHIBITED																
0131	LIGHTERS, FUSE	1	1.4S		1.4		LQ0	P142		MP23					4	W2		CW1	CE1	1.4S
0132	DEFLAGRATING METAL SALTS OF AROMATIC NITRODERIVATIVES, N.O.S.	1	1.3C		1 (+13)	274	LQ0	P114(a) P114(b)	PP26	MP2					1	W2 W3		CW1		1.3C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0133	MANNITOL HEXANITRATE (NITROMANNITE), WETTED with not less than 40 % water, or mixture of alcohol and water, by mass	1	1.1D		1 (+15)	266	LQ0	P112(a)		MP20					1	W2		CW1		1.1D
0135	MERCURY FULMINATE, WETTED with not less than 20 % water, or mixture of alcohol and water, by mass	1	1.1A	PROHIBITED																
0136	MINES with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0137	MINES with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0138	MINES with bursting charge	1	1.2D		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2D
0143	NITROGLYCERIN, DESENSITIZED with not less than 40 % non-volatile water-insoluble phlegmatizer, by mass	1	1.1D		1+6.1 (+15)	266 271	LQ0	P115	PP53 PP54 PP57 PP58	MP20					1	W2		CW1 CW28		1.1D
0144	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1 % but not more than 10 % nitroglycerin	1	1.1D		1 (+13)	500	LQ0	P115	PP45 PP55 PP56 PP59 PP60	MP20					1	W2		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0146	NITROSTARCH, dry or wetted with less than 20 % water, by mass	1	1.1D		1 (+15)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0147	NITRO UREA	1	1.1D		1 (+13)		LQ0	P112(b)		MP20					1	W2 W3		CW1		1.1D
0150	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), WETTED with not less than 25 % water, by mass, or DESENSITIZED with not less than 15 % phlegmatizer, by mass	1	1.1D		1 (+15)	266	LQ0	P112(a) P112(b)		MP20					1	W2 W3		CW1		1.1D
0151	PENTOLITE, dry or wetted with less than 15 % water, by mass	1	1.1D		1 (+13)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0153	TRINITROANILINE (PICRAMIDE)	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0154	TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30 % water, by mass	1	1.1D		1 (+13)	15	LQ0	P112(a) P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0154	TRINITROPHENOL (PICRIC ACID) wetted with not less than 10 % water, by mass	4.1	D	I	4.1	15	LQ0	P406		MP2					1	W1				40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0155	TRINITROCHLOROBENZENE (PICRYL CHLORIDE)	1	1.1D		1 (+13)	15	LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0155	TRINITROCHLOROBENZENE (PICRYL CHLORIDE) wetted with not less than 10 % water, by mass	4.1	D	I	4.1	15	LQ0	P406		MP2					1	W1				40
0159	POWDER CAKE (POWDER PASTE), WETTED with not less than 25 % water, by mass	1	1.3C		1 (+13)	266	LQ0	P111	PP43	MP20					1	W2		CW1		1.3C
0160	POWDER, SMOKELESS	1	1.1C		1 (+15)		LQ0	P114(b)	PP50 PP52	MP20 MP24					1	W2 W3		CW1		1.1C
0161	POWDER, SMOKELESS	1	1.3C		1 (+13)		LQ0	P114(b)	PP50 PP52	MP20 MP24					1	W2 W3		CW1		1.3C
0167	PROJECTILES with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0168	PROJECTILES with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0169	PROJECTILES with bursting charge	1	1.2D		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2D
0171	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1	1.2G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0173	RELEASE DEVICES, EXPLOSIVE	1	1.4S		1.4		LQ0	P134 LP102		MP23					4	W2		CW1	CE1	1.4S
0174	RIVETS, EXPLOSIVE	1	1.4S		1.4		LQ0	P134 LP102		MP23					4	W2		CW1	CE1	1.4S
0180	ROCKETS with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0181	ROCKETS with bursting charge	1	1.1E		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1E
0182	ROCKETS with bursting charge	1	1.2E		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2E
0183	ROCKETS with inert head	1	1.3C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.3C
0186	ROCKET MOTORS	1	1.3C		1		LQ0	P130 LP101	PP67 L1	MP22 MP24					1	W2		CW1		1.3C
0190	SAMPLES, EXPLOSIVE, other than initiating explosive	1			see 2.2.1.1.3	16 274	LQ0	P101		MP2					0	W2		CW1		
0191	SIGNAL DEVICES, HAND	1	1.4G		1.4		LQ0	P135		MP23 MP24					2	W2		CW1		1.4G
0192	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1	1.1G		1 (+13)		LQ0	P135		MP23					1	W2		CW1		1.1G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0193	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1	1.4S		1.4		LQ0	P135		MP23					4	W2		CW1	CE1	1.4S
0194	SIGNALS, DISTRESS, ship	1	1.1G		1 (+13)		LQ0	P135		MP23 MP24					1	W2		CW1		1.1G
0195	SIGNALS, DISTRESS, ship	1	1.3G		1		LQ0	P135		MP23 MP24					1	W2		CW1		1.3G
0196	SIGNALS, SMOKE	1	1.1G		1 (+13)		LQ0	P135		MP23					1	W2		CW1		1.1G
0197	SIGNALS, SMOKE	1	1.4G		1.4		LQ0	P135		MP23 MP24					2	W2		CW1		1.4G
0204	SOUNDING DEVICES, EXPLOSIVE	1	1.2F		1 (+13)		LQ0	P134 LP102		MP23					1	W2		CW1		1.2F
0207	TETRANITROANILINE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0208	TRINITROPHENYL-METHYLNITRAMINE (TETRYL)	1	1.1D		1 (+15)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0209	TRINITROTOLUENE (TNT), dry or wetted with less than 30 % water, by mass	1	1.1D		1 (+13)	15	LQ0	P112(b) P112(c)	PP46	MP20					1	W2 W3		CW1		1.1D
0209	TRINITROTOLUENE (TNT), wetted with not less than 10 % water, by mass	4.1	D	I	4.1	15	LQ0	P406		MP2					1	W1				40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0212	TRACERS FOR AMMUNITION	1	1.3G		1		LQ0	P133	PP69	MP23					1	W2		CW1		1.3G
0213	TRINITROANISOLE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0214	TRINITROBENZENE, dry or wetted with less than 30 % water, by mass	1	1.1D		1 (+13)	15	LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0214	TRINITROBENZENE, wetted with not less than 10 % water, by mass	4.1	D	I	4.1	15	LQ0	P406		MP2					1	W1				40
0215	TRINITROBENZOIC ACID, dry or wetted with less than 30 % water, by mass	1	1.1D		1 (+13)	15	LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0215	TRINITROBENZOIC ACID, wetted with not less than 10 % water, by mass	4.1	D	I	4.1	15	LQ0	P406		MP2					1	W1				40
0216	TRINITRO-m-CRESOL	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0217	TRINITRONAPHTHALENE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0218	TRINITROPHENETOLE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0219	TRINITRORESORCINOL (STYPHNIC ACID), dry or wetted with less than 20 % water, or mixture of alcohol and water, by mass	1	1.1D		1 (+15)		LQ0	P112(a) P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0220	UREA NITRATE, dry or wetted with less than 20 % water, by mass	1	1.1D		1 (+13)	18	LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0220	UREA NITRATE, wetted with not less than 10 % water, by mass	4.1	D	I	4.1	18	LQ0	P406		MP2					1	W1				40
0221	WARHEADS, TORPEDO with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0222	AMMONIUM NITRATE with more than 0,2 % combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)	PP47	MP20					1	W2 W3		CW1		1.1D
0223	AMMONIUM NITRATE FERTILIZER, which is more liable to explode than ammonium nitrate with 0,2 % combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)	PP47	MP20					1	W2 W3		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0224	BARIUM AZIDE, dry or wetted with less than 50 % water, by mass	1	1.1A	PROHIBITED																
0225	BOOSTERS WITH DETONATOR	1	1.1B		1 (+13)		LQ0	P133	PP69	MP23					1	W2		CW1		1.1B
0226	CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN), WETTED with not less than 15 % water, by mass	1	1.1D		1 (+15)	266	LQ0	P112(a)	PP45	MP20					1	W2		CW1		1.1D
0234	SODIUM DINITRO-o-CRESOLATE, dry or wetted with less than 15 % water, by mass	1	1.3C		1 (+13)	15	LQ0	P114(a) P114(b)	PP26	MP20					1	W2 W3		CW1		1.3C
0234	SODIUM DINITRO-o-CRESOLATE, WETTED with not less than 10 % water, by mass	4.1	DT	I	4.1+6.1	15	LQ0	P406		MP2					1	W1		CW13 CW28		46
0235	SODIUM PICRAMATE, dry or wetted with less than 20 % water, by mass	1	1.3C		1 (+13)		LQ0	P114(a) P114(b)	PP26	MP20					1	W2 W3		CW1		1.3C
0236	ZIRCONIUM PICRAMATE, dry or wetted with less than 20 % water, by mass	1	1.3C		1 (+13)		LQ0	P114(a) P114(b)	PP26	MP20					1	W2 W3		CW1		1.3C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0237	CHARGES, SHAPED, FLEXIBLE, LINEAR	1	1.4D		1.4		LQ0	P138		MP21					2	W2		CW1		1.4D
0238	ROCKETS, LINE-THROWING	1	1.2G		1		LQ0	P130		MP23 MP24					1	W2		CW1		1.2G
0240	ROCKETS, LINE-THROWING	1	1.3G		1		LQ0	P130		MP23 MP24					1	W2		CW1		1.3G
0241	EXPLOSIVE, BLASTING, TYPE E	1	1.1D		1 (+13)	617	LQ0	P116 IBC100	PP61 PP62 PP65 B10	MP20					1	W2		CW1		1.1D
0242	CHARGES, PROPELLING, FOR CANNON	1	1.3C		1		LQ0	P130		MP22					1	W2		CW1		1.3C
0243	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1	1.2H		1 (+13)		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2H
0244	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1	1.3H		1 (+13)		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3H
0245	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1	1.2H		1 (+13)		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2H

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0246	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1	1.3H		1 (+13)		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3H
0247	AMMUNITION, INCENDIARY, liquid or gel, with burster, expelling charge or propelling charge	1	1.3J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.3J
0248	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge	1	1.2L		1 (+13)	274	LQ0	P144	PP77	MP1					0	W2		CW1 CW4		1.2L
0249	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge	1	1.3L		1 (+13)	274	LQ0	P144	PP77	MP1					0	W2		CW1 CW4		1.3L
0250	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1	1.3L		1 (+13)		LQ0	P101		MP1					0	W2		CW1 CW4		1.3L
0254	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1	1.3G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0255	DETONATORS, ELECTRIC for blasting	1	1.4B		1.4		LQ0	P131		MP23					2	W2		CW1		1.4B
0257	FUZES, DETONATING	1	1.4B		1.4		LQ0	P141		MP23					2	W2		CW1		1.4B

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0266	OCTOLITE (OCTOL), dry or wetted with less than 15 % water, by mass	1	1.1D		1 (+13)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0267	DETONATORS, NON-ELECTRIC for blasting	1	1.4B		1.4		LQ0	P131	PP68	MP23					2	W2		CW1		1.4B
0268	BOOSTERS WITH DETONATOR	1	1.2B		1 (+13)		LQ0	P133	PP69	MP23					1	W2		CW1		1.2B
0271	CHARGES, PROPELLING	1	1.1C		1 (+13)		LQ0	P143	PP76	MP22					1	W2		CW1		1.1C
0272	CHARGES, PROPELLING	1	1.3C		1		LQ0	P143	PP76	MP22					1	W2		CW1		1.3C
0275	CARTRIDGES, POWER DEVICE	1	1.3C		1		LQ0	P134 LP102		MP22					1	W2		CW1		1.3C
0276	CARTRIDGES, POWER DEVICE	1	1.4C		1.4		LQ0	P134 LP102		MP22					2	W2		CW1		1.4C
0277	CARTRIDGES, OIL WELL	1	1.3C		1		LQ0	P134 LP102		MP22					1	W2		CW1		1.3C
0278	CARTRIDGES, OIL WELL	1	1.4C		1.4		LQ0	P134 LP102		MP22					2	W2		CW1		1.4C
0279	CHARGES, PROPELLING, FOR CANNON	1	1.1C		1 (+13)		LQ0	P130		MP22					1	W2		CW1		1.1C
0280	ROCKET MOTORS	1	1.1C		1 (+13)		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.1C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0281	ROCKET MOTORS	1	1.2C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.2C
0282	NITROGUANIDINE (PICRITE), dry or wetted with less than 20 % water, by mass	1	1.1D		1 (+13)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0283	BOOSTERS without detonator	1	1.2D		1		LQ0	P132		MP21					1	W2		CW1		1.2D
0284	GRENADES, hand or rifle, with bursting charge	1	1.1D		1 (+13)		LQ0	P141		MP21					1	W2		CW1		1.1D
0285	GRENADES, hand or rifle, with bursting charge	1	1.2D		1		LQ0	P141		MP21					1	W2		CW1		1.2D
0286	WARHEADS, ROCKET with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0287	WARHEADS, ROCKET with bursting charge	1	1.2D		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2D
0288	CHARGES, SHAPED, FLEXIBLE, LINEAR	1	1.1D		1 (+13)		LQ0	P138		MP21					1	W2		CW1		1.1D
0289	CORD, DETONATING, flexible	1	1.4D		1.4		LQ0	P139	PP71 PP72	MP21					2	W2		CW1		1.4D
0290	CORD (FUSE), DETONATING, metal clad	1	1.1D		1 (+13)		LQ0	P139	PP71	MP21					1	W2		CW1		1.1D
0291	BOMBS with bursting charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0292	GRENADES, hand or rifle, with bursting charge	1	1.1F		1 (+13)		LQ0	P141		MP23					1	W2		CW1		1.1F
0293	GRENADES, hand or rifle, with bursting charge	1	1.2F		1 (+13)		LQ0	P141		MP23					1	W2		CW1		1.2F
0294	MINES with bursting charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F
0295	ROCKETS with bursting charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F
0296	SOUNDING DEVICES, EXPLOSIVE	1	1.1F		1 (+13)		LQ0	P134 LP102		MP23					1	W2		CW1		1.1F
0297	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G
0299	BOMBS, PHOTO-FLASH	1	1.3G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0300	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G
0301	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1	1.4G		1.4+6.1+8		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1 CW28		1.4G
0303	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1	1.4G		1.4	204	LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0305	FLASH POWDER	1	1.3G		1		LQ0	P113	PP49	MP20					1	W2 W3		CW1		1.3G
0306	TRACERS FOR AMMUNITION	1	1.4G		1.4		LQ0	P133	PP69	MP23					2	W2		CW1		1.4G
0312	CARTRIDGES, SIGNAL	1	1.4G		1.4		LQ0	P135		MP23 MP24					2	W2		CW1		1.4G
0313	SIGNALS, SMOKE	1	1.2G		1		LQ0	P135		MP23					1	W2		CW1		1.2G
0314	IGNITERS	1	1.2G		1		LQ0	P142		MP23					1	W2		CW1		1.2G
0315	IGNITERS	1	1.3G		1		LQ0	P142		MP23					1	W2		CW1		1.3G
0316	FUZES, IGNITING	1	1.3G		1		LQ0	P141		MP23					1	W2		CW1		1.3G
0317	FUZES, IGNITING	1	1.4G		1.4		LQ0	P141		MP23					2	W2		CW1		1.4G
0318	GRENADES, PRACTICE, hand or rifle	1	1.3G		1		LQ0	P141		MP23					1	W2		CW1		1.3G
0319	PRIMERS, TUBULAR	1	1.3G		1		LQ0	P133		MP23					1	W2		CW1		1.3G
0320	PRIMERS, TUBULAR	1	1.4G		1.4		LQ0	P133		MP23					2	W2		CW1		1.4G
0321	CARTRIDGES FOR WEAPONS with bursting charge	1	1.2E		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2E
0322	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1	1.2L		1 (+13)		LQ0	P101		MP1					0	W2		CW1 CW4		1.2L

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0323	CARTRIDGES, POWER DEVICE	1	1.4S		1.4		LQ0	P134 LP102		MP23					4	W2		CW1	CE1	1.4S
0324	PROJECTILES with bursting charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F
0325	IGNITERS	1	1.4G		1.4		LQ0	P142		MP23					2	W2		CW1		1.4G
0326	CARTRIDGES FOR WEAPONS, BLANK	1	1.1C		1 (+13)		LQ0	P130		MP22					1	W2		CW1		1.1C
0327	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1	1.3C		1		LQ0	P130		MP22					1	W2		CW1		1.3C
0328	CARTRIDGES FOR WEAPONS, INERT PROJECTILE	1	1.2C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.2C
0329	TORPEDOES with bursting charge	1	1.1E		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1E
0330	TORPEDOES with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0331	EXPLOSIVE, BLASTING, TYPE B	1	1.5D		1.5	268 617	LQ0	P116 IBC100	PP61 PP62 PP64 PP65	MP20					1	W2		CW1		1.5D
0332	EXPLOSIVE, BLASTING, TYPE E	1	1.5D		1.5	268 617	LQ0	P116 IBC100	PP61 PP62 PP65	MP20					1	W2		CW1		1.5D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0333	FIREWORKS	1	1.1G		1 (+13)		LQ0	P135		MP23 MP24					1	W2 W3		CW1		1.1G
0334	FIREWORKS	1	1.2G		1		LQ0	P135		MP23 MP24					1	W2 W3		CW1		1.2G
0335	FIREWORKS	1	1.3G		1		LQ0	P135		MP23 MP24					1	W2 W3		CW1		1.3G
0336	FIREWORKS	1	1.4G		1.4		LQ0	P135		MP23 MP24					2	W2		CW1	CE1	1.4G
0337	FIREWORKS	1	1.4S		1.4		LQ0	P135		MP23 MP24					4	W2		CW1	CE1	1.4S
0338	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1	1.4C		1.4		LQ0	P130		MP22					2	W2		CW1		1.4C
0339	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1	1.4C		1.4		LQ0	P130		MP22					2	W2		CW1		1.4C
0340	NITROCELLULOSE, dry or wetted with less than 25 % water (or alcohol), by mass	1	1.1D		1 (+15)		LQ0	P112(a) P112(b)		MP20					1	W2 W3		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0341	NITROCELLULOSE, unmodified or plasticized with less than 18 % plasticizing substance, by mass	1	1.1D		1 (+15)		LQ0	P112(b)		MP20					1	W2 W3		CW1		1.1D
0342	NITROCELLULOSE, WETTED with not less than 25 % alcohol, by mass	1	1.3C		1 (+13)	105	LQ0	P114(a)	PP43	MP20					1	W2		CW1		1.3C
0343	NITROCELLULOSE, PLASTICIZED withnot less than 18 % plasticizing substance, by mass	1	1.3C		1 (+13)	105	LQ0	P111		MP20					1	W2		CW1		1.3C
0344	PROJECTILES with bursting charge	1	1.4D		1.4		LQ0	P130 LP101	PP67 L1	MP21					2	W2		CW1		1.4D
0345	PROJECTILES, inert with tracer	1	1.4S		1.4		LQ0	P130 LP101	PP67 L1	MP23					4	W2		CW1	CE1	1.4S
0346	PROJECTILES with burster or expelling charge	1	1.2D		1		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.2D
0347	PROJECTILES with burster or expelling charge	1	1.4D		1.4		LQ0	P130 LP101	PP67 L1	MP21					2	W2		CW1		1.4D
0348	CARTRIDGES FOR WEAPONS with bursting charge	1	1.4F		1.4		LQ0	P130		MP23					2	W2		CW1		1.4F
0349	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4S		1.4	178 274	LQ0	P101		MP2					4	W2		CW1	CE1	1.4S

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0350	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4B		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4B
0351	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4C		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4C
0352	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4D		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4D
0353	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4G		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4G
0354	ARTICLES, EXPLOSIVE, N.O.S.	1	1.1L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.1L
0355	ARTICLES, EXPLOSIVE, N.O.S.	1	1.2L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.2L
0356	ARTICLES, EXPLOSIVE, N.O.S.	1	1.3L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.3L
0357	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.1L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.1L
0358	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.2L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.2L
0359	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.3L		1 (+13)	178 274	LQ0	P101		MP1					0	W2		CW1 CW4		1.3L
0360	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1	1.1B		1 (+13)		LQ0	P131		MP23					1	W2		CW1		1.1B

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0361	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1	1.4B		1.4		LQ0	P131		MP23					2	W2		CW1		1.4B
0362	AMMUNITION, PRACTICE	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G
0363	AMMUNITION, PROOF	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G
0364	DETONATORS FOR AMMUNITION	1	1.2B		1 (+13)		LQ0	P133		MP23					1	W2		CW1		1.2B
0365	DETONATORS FOR AMMUNITION	1	1.4B		1.4		LQ0	P133		MP23					2	W2		CW1		1.4B
0366	DETONATORS FOR AMMUNITION	1	1.4S		1.4		LQ0	P133		MP23					4	W2		CW1	CE1	1.4S
0367	FUZES, DETONATING	1	1.4S		1.4		LQ0	P141		MP23					4	W2		CW1	CE1	1.4S
0368	FUZES, IGNITING	1	1.4S		1.4		LQ0	P141		MP23					4	W2		CW1	CE1	1.4S
0369	WARHEADS, ROCKET with bursting charge	1	1.1F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.1F
0370	WARHEADS, ROCKET with burster or expelling charge	1	1.4D		1.4		LQ0	P130 LP101	PP67 L1	MP21					2	W2		CW1		1.4D
0371	WARHEADS, ROCKET with burster or expelling charge	1	1.4F		1.4		LQ0	P130		MP23					2	W2		CW1		1.4F

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0372	GRENADES, PRACTICE, hand or rifle	1	1.2G		1		LQ0	P141		MP23					1	W2		CW1		1.2G
0373	SIGNAL DEVICES, HAND	1	1.4S		1.4		LQ0	P135		MP23 MP24					4	W2		CW1	CE1	1.4S
0374	SOUNDING DEVICES, EXPLOSIVE	1	1.1D		1 (+13)		LQ0	P134 LP102		MP21					1	W2		CW1		1.1D
0375	SOUNDING DEVICES, EXPLOSIVE	1	1.2D		1		LQ0	P134 LP102		MP21					1	W2		CW1		1.2D
0376	PRIMERS, TUBULAR	1	1.4S		1.4		LQ0	P133		MP23					4	W2		CW1	CE1	1.4S
0377	PRIMERS, CAP TYPE	1	1.1B		1 (+13)		LQ0	P133		MP23					1	W2		CW1		1.1B
0378	PRIMERS, CAP TYPE	1	1.4B		1.4		LQ0	P133		MP23					2	W2		CW1		1.4B
0379	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1	1.4C		1.4		LQ0	P136		MP22					2	W2		CW1		1.4C
0380	ARTICLES, PYROPHORIC	1	1.2L		1 (+13)		LQ0	P101		MP1					0	W2		CW1 CW4		1.2L
0381	CARTRIDGES, POWER DEVICE	1	1.2C		1		LQ0	P134 LP102		MP22					1	W2		CW1		1.2C
0382	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1	1.2B		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.2B

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0383	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1	1.4B		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4B
0384	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1	1.4S		1.4	178 274	LQ0	P101		MP2					4	W2		CW1	CE1	1.4S
0385	5-NITROBENZOTRIAZOL	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0386	TRINITROBENZENESULPHONIC ACID	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)	PP26	MP20					1	W2 W3		CW1		1.1D
0387	TRINITROFLUORENONE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0388	TRINITROTOLUENE (TNT) AND TRINITROBENZENE MIXTURE or TRINITROTOLUENE (TNT) AND HEXANITROSTILBENE MIXTURE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0389	TRINITROTOLUENE (TNT) MIXTURE CONTAINING TRINITROBENZENE AND HEXANITROSTILBENE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0390	TRITONAL	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0391	CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX) AND CYCLOTETRA-METHYLENETETRANITRAMINE (HMX; OCTOGEN) MIXTURE, WETTED with not less than 15 % water, by mass or DESENSITIZED with not lest than 10 % phlegmatiser by mass	1	1.1D		1 (+15)	266	LQ0	P112(a) P112(b)		MP20					1	W2 W3		CW1		1.1D
0392	HEXANITROSTILBENE	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0393	HEXOTONAL	1	1.1D		1 (+13)		LQ0	P112(b)		MP20					1	W2 W3		CW1		1.1D
0394	TRINITRORESORCINOL (STYPHNIC ACID), WETTED with not less than 20 % water, or mixture of alcohol and water, by mass	1	1.1D		1 (+15)		LQ0	P112(a)	PP26	MP20					1	W2		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0395	ROCKET MOTORS, LIQUID FUELLED	1	1.2J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.2J
0396	ROCKET MOTORS, LIQUID FUELLED	1	1.3J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.3J
0397	ROCKETS, LIQUID FUELLED with bursting charge	1	1.1J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.1J
0398	ROCKETS, LIQUID FUELLED with bursting charge	1	1.2J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.2J
0399	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1	1.1J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.1J
0400	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1	1.2J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.2J
0401	DIPICRYL SULPHIDE, dry or wetted with less than 10 % water, by mass	1	1.1D		1 (+13)		LQ0	P112 a,b,c		MP20					1	W2 W3		CW1		1.1D
0402	AMMONIUM PERCHLORATE	1	1.1D		1 (+13)	152	LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0403	FLARES, AERIAL	1	1.4G		1.4		LQ0	P135		MP23					2	W2		CW1		1.4G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0404	FLARES, AERIAL	1	1.4S		1.4		LQ0	P135		MP23					4	W2		CW1	CE1	1.4S
0405	CARTRIDGES, SIGNAL	1	1.4S		1.4		LQ0	P135		MP23 MP24					4	W2		CW1	CE1	1.4S
0406	DINITROSOBENZENE	1	1.3C		1 (+13)		LQ0	P114(b)		MP20					1	W2 W3		CW1		1.3C
0407	TETRAZOL-1-ACETIC ACID	1	1.4C		1.4		LQ0	P114(b)		MP20					2	W2		CW1		1.4C
0408	FUZES, DETONATING with protective features	1	1.1D		1 (+13)		LQ0	P141		MP21					1	W2		CW1		1.1D
0409	FUZES, DETONATING with protective features	1	1.2D		1		LQ0	P141		MP21					1	W2		CW1		1.2D
0410	FUZES, DETONATING with protective features	1	1.4D		1.4		LQ0	P141		MP21					2	W2		CW1		1.4D
0411	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) with not less than 7 % wax, by mass	1	1.1D		1 (+15)	131	LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0412	CARTRIDGES FOR WEAPONS with bursting charge	1	1.4E		1.4		LQ0	P130 LP101	PP67 L1	MP21					2	W2		CW1		1.4E

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0413	CARTRIDGES FOR WEAPONS, BLANK	1	1.2C		1		LQ0	P130		MP22					1	W2		CW1		1.2C
0414	CHARGES, PROPELLING, FOR CANNON	1	1.2C		1		LQ0	P130		MP22					1	W2		CW1		1.2C
0415	CHARGES, PROPELLING	1	1.2C		1		LQ0	P143	PP76	MP22					1	W2		CW1		1.2C
0417	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1	1.3C		1		LQ0	P130		MP22					1	W2		CW1		1.3C
0418	FLARES, SURFACE	1	1.1G		1 (+13)		LQ0	P135		MP23					1	W2		CW1		1.1G
0419	FLARES, SURFACE	1	1.2G		1		LQ0	P135		MP23					1	W2		CW1		1.2G
0420	FLARES, AERIAL	1	1.1G		1 (+13)		LQ0	P135		MP23					1	W2		CW1		1.1G
0421	FLARES, AERIAL	1	1.2G		1		LQ0	P135		MP23					1	W2		CW1		1.2G
0424	PROJECTILES, inert with tracer	1	1.3G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0425	PROJECTILES, inert with tracer	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0426	PROJECTILES with burster or expelling charge	1	1.2F		1 (+13)		LQ0	P130		MP23					1	W2		CW1		1.2F
0427	PROJECTILES with burster or expelling charge	1	1.4F		1.4		LQ0	P130		MP23					2	W2		CW1		1.4F
0428	ARTICLES, PYROTECHNIC for technical purposes	1	1.1G		1 (+13)		LQ0	P135		MP23 MP24					1	W2		CW1		1.1G
0429	ARTICLES, PYROTECHNIC for technical purposes	1	1.2G		1		LQ0	P135		MP23 MP24					1	W2		CW1		1.2G
0430	ARTICLES, PYROTECHNIC for technical purposes	1	1.3G		1		LQ0	P135		MP23 MP24					1	W2		CW1		1.3G
0431	ARTICLES, PYROTECHNIC for technical purposes	1	1.4G		1.4		LQ0	P135		MP23 MP24					2	W2		CW1	CE1	1.4G
0432	ARTICLES, PYROTECHNIC for technical purposes	1	1.4S		1.4		LQ0	P135		MP23 MP24					4	W2		CW1	CE1	1.4S
0433	POWDER CAKE (POWDER PASTE), WETTED with not less than 17 % alcohol, by mass	1	1.1C		1 (+13)	266	LQ0	P111		MP20					1	W2		CW1		1.1C
0434	PROJECTILES with burster or expelling charge	1	1.2G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.2G

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0435	PROJECTILES with burster or expelling charge	1	1.4G		1.4		LQ0	P130 LP101	PP67 L1	MP23					2	W2		CW1		1.4G
0436	ROCKETS with expelling charge	1	1.2C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.2C
0437	ROCKETS with expelling charge	1	1.3C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.3C
0438	ROCKETS with expelling charge	1	1.4C		1.4		LQ0	P130 LP101	PP67 L1	MP22					2	W2		CW1		1.4C
0439	CHARGES, SHAPED, without detonator	1	1.2D		1		LQ0	P137	PP70	MP21					1	W2		CW1		1.2D
0440	CHARGES, SHAPED, without detonator	1	1.4D		1.4		LQ0	P137	PP70	MP21					2	W2		CW1		1.4D
0441	CHARGES, SHAPED, without detonator	1	1.4S		1.4		LQ0	P137	PP70	MP23					4	W2		CW1	CE1	1.4S
0442	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1	1.1D		1 (+13)		LQ0	P137		MP21					1	W2		CW1		1.1D
0443	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1	1.2D		1		LQ0	P137		MP21					1	W2		CW1		1.2D
0444	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1	1.4D		1.4		LQ0	P137		MP21					2	W2		CW1		1.4D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0445	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1	1.4S		1.4		LQ0	P137		MP23					4	W2		CW1	CE1	1.4S
0446	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1	1.4C		1.4		LQ0	P136		MP22					2	W2		CW1		1.4C
0447	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1	1.3C		1		LQ0	P136		MP22					1	W2		CW1		1.3C
0448	5-MERCAPTOTETRAZOL -1-ACETIC ACID	1	1.4C		1.4		LQ0	P114(b)		MP20					2	W2		CW1		1.4C
0449	TORPEDOES, LIQUID FUELLED with or without bursting charge	1	1.1J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.1J
0450	TORPEDOES, LIQUID FUELLED with inert head	1	1.3J		1 (+13)		LQ0	P101		MP23					1	W2		CW1		1.3J
0451	TORPEDOES with bursting charge	1	1.1D		1 (+13)		LQ0	P130 LP101	PP67 L1	MP21					1	W2		CW1		1.1D
0452	GRENADES, PRACTICE, hand or rifle	1	1.4G		1.4		LQ0	P141		MP23					2	W2		CW1		1.4G
0453	ROCKETS, LINE-THROWING	1	1.4G		1.4		LQ0	P130		MP23					2	W2		CW1		1.4G
0454	IGNITERS	1	1.4S		1.4		LQ0	P142		MP23					4	W2		CW1	CE1	1.4S
0455	DETONATORS, NON-ELECTRIC for blasting	1	1.4S		1.4		LQ0	P131	PP68	MP23					4	W2		CW1	CE1	1.4S

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	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0456	DETONATORS, ELECTRIC for blasting	1	1.4S		1.4		LQ0	P131		MP23					4	W2		CW1	CE1	1.4S
0457	CHARGES, BURSTING, PLASTICS BONDED	1	1.1D		1 (+13)		LQ0	P130		MP21					1	W2		CW1		1.1D
0458	CHARGES, BURSTING, PLASTICS BONDED	1	1.2D		1		LQ0	P130		MP21					1	W2		CW1		1.2D
0459	CHARGES, BURSTING, PLASTICS BONDED	1	1.4D		1.4		LQ0	P130		MP21					2	W2		CW1		1.4D
0460	CHARGES, BURSTING, PLASTICS BONDED	1	1.4S		1.4		LQ0	P130		MP23					4	W2		CW1	CE1	1.4S
0461	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1	1.1B		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.1B
0462	ARTICLES, EXPLOSIVE, N.O.S.	1	1.1C		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.1C
0463	ARTICLES, EXPLOSIVE, N.O.S.	1	1.1D		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.1D
0464	ARTICLES, EXPLOSIVE, N.O.S.	1	1.1E		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.1E
0465	ARTICLES, EXPLOSIVE, N.O.S.	1	1.1F		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.1F
0466	ARTICLES, EXPLOSIVE, N.O.S.	1	1.2C		1	178 274	LQ0	P101		MP2					1	W2		CW1		1.2C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0467	ARTICLES, EXPLOSIVE, N.O.S.	1	1.2D		1	178 274	LQ0	P101		MP2					1	W2		CW1		1.2D
0468	ARTICLES, EXPLOSIVE, N.O.S.	1	1.2E		1	178 274	LQ0	P101		MP2					1	W2		CW1		1.2E
0469	ARTICLES, EXPLOSIVE, N.O.S.	1	1.2F		1 (+13)	178 274	LQ0	P101		MP2					1	W2		CW1		1.2F
0470	ARTICLES, EXPLOSIVE, N.O.S.	1	1.3C		1	178 274	LQ0	P101		MP2					1	W2		CW1		1.3C
0471	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4E		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4E
0472	ARTICLES, EXPLOSIVE, N.O.S.	1	1.4F		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4F
0473	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.1A	PROHIBITED																
0474	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.1C		1 (+13)	178 274	LQ0	P101		MP2					1	W2 W3		CW1		1.1C
0475	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.1D		1 (+13)	178 274	LQ0	P101		MP2					1	W2 W3		CW1		1.1D
0476	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.1G		1 (+13)	178 274	LQ0	P101		MP2					1	W2 W3		CW1		1.1G
0477	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.3C		1 (+13)	178 274	LQ0	P101		MP2					1	W2 W3		CW1		1.3C

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0478	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.3G		1	178 274	LQ0	P101		MP2					1	W2 W3		CW1		1.3G
0479	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.4C		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4C
0480	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.4D		1.4	178 274	LQ0	P101		MP2					2	W2		CW1		1.4D
0481	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.4S		1.4	178 274	LQ0	P101		MP2					4	W2		CW1		1.4S
0482	SUBSTANCES, EXPLOSIVE, VERY INSENSITIVE (SUBSTANCES, EVI), N.O.S.	1	1.5D		1.5	178 274	LQ0	P101		MP2					1	W2		CW1		1.5D
0483	CYCLOTRIMETHYLENE-TRINITRA-MINE (CYCLO-NITE; HEXOGEN; RDX), DESENSITIZED	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0484	CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN), DESENSITIZED	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0485	SUBSTANCES, EXPLOSIVE, N.O.S.	1	1.4G		1.4	178 274	LQ0	P101		MP2					2	W2 W3		CW1		1.4G
0486	ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EEI)	1	1.6N		1.6		LQ0	P101		MP23					2	W2		CW1		1.6N

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0487	SIGNALS, SMOKE	1	1.3G		1		LQ0	P135		MP23					1	W2		CW1		1.3G
0488	AMMUNITION, PRACTICE	1	1.3G		1		LQ0	P130 LP101	PP67 L1	MP23					1	W2		CW1		1.3G
0489	DINITROGLYCOLURIL (DINGU)	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0490	NITROTRIAZOLONE (NTO)	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D
0491	CHARGES, PROPELLING	1	1.4C		1.4		LQ0	P143	PP76	MP22					2	W2		CW1		1.4C
0492	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1	1.3G		1		LQ0	P135		MP23					1	W2		CW1		1.3G
0493	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1	1.4G		1.4		LQ0	P135		MP23					2	W2		CW1		1.4G
0494	JET PERFORATING GUNS, CHARGED, oil well, without detonator	1	1.4D		1.4		LQ0	P101		MP21					2	W2		CW1		1.4D
0495	PROPELLANT, LIQUID	1	1.3C		1 (+13)	224	LQ0	P115	PP53 PP54 PP57 PP58	MP20					1	W2		CW1		1.3C
0496	OCTONAL	1	1.1D		1 (+13)		LQ0	P112(b) P112(c)		MP20					1	W2 W3		CW1		1.1D

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
0497	PROPELLANT, LIQUID	1	1.1C		1 (+13)	224	LQ0	P115	PP53 PP54 PP57 PP58	MP20					1	W2		CW1		1.1C
0498	PROPELLANT, SOLID	1	1.1C		1 (+13)		LQ0	P114(b)		MP20					1	W2		CW1		1.1C
0499	PROPELLANT, SOLID	1	1.3C		1 (+13)		LQ0	P114(b)		MP20					1	W2		CW1		1.3C
0500	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1	1.4S		1.4		LQ0	P131		MP23					4	W2		CW1	CE1	1.4S
0501	PROPELLANT, SOLID	1	1.4C		1.4		LQ0	P114(b)		MP20					2	W2		CW1		1.4C
0502	ROCKETS with inert head	1	1.2C		1		LQ0	P130 LP101	PP67 L1	MP22					1	W2		CW1		1.2C
0503	AIR BAG INFLATORS, PYROTECHNIC or AIR BAG MODULES, PYROTECHNIC or SEAT-BELT PRETENSIONERS, PYROTECHNIC	1	1.4G		1.4	289	LQ0	P135		MP23					2	W2		CW1		1.4G
0504	1H-TETRAZOLE	1	1.1D		1 (+13)		LQ0	P112(c)	PP48	MP20					1	W2		CW1		1.1D
1001	ACETYLENE, DISSOLVED	2	4F		2.1 (+13)		LQ0	P200		MP9			PxBN	TU17	2			CW9 CW10	CE2	239

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1002	AIR, COMPRESSED	2	1A		2.2 (+13)	292	LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1003	AIR, REFRIGERATED LIQUID	2	3O		2.2+5.1 (+13)		LQ0	P203		MP9	T75	TP22	RxBN	TU7 TU19 TM6	3	W5		CW9 CW11 CW30	CE2	225
1005	AMMONIA, ANHYDROUS	2	2TC		2.3+8 (+13)	23	LQ0	P200		MP9	T50		PxBH(M)	TE1 TM6	1			CW9 CW10		268
1006	ARGON, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1008	BORON TRIFLUORIDE, COMPRESSED	2	1TC		2.3+8 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		268
1009	BROMOTRIFLUOROMETHANE (REFRIGERANT GAS R 13B1)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1010	1,2-BUTADIENE, STABILIZED or 1,3-BUTADIENE, STABILIZED or MIXTURES OF 1,3-BUTADIENE AND HYDROCARBONS, STABILIZED, having a vapour pressure at 70 °C not exceeding 1,1 MPa (11bar) and a density at 50 °C not lower than 0,525 kg/l	2	2F		2.1 (+13)	618	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1011	BUTANE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1012	BUTYLENES MIXTURE or 1-BUTYLENE or CIS-2-BUTYLENE or TRANS-2-BUTYLENE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1013	CARBON DIOXIDE	2	2A		2.2 (+13)	584	LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1014	CARBON DIOXIDE AND OXYGEN MIXTURE, COMPRESSED	2	1O		2.2+5.1 (+13)		LQ0	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	25
1015	CARBON DIOXIDE AND NITROUS OXIDE MIXTURE	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1016	CARBON MONOXIDE, COMPRESSED	2	1TF		2.3+2.1 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		263
1017	CHLORINE	2	2TC		2.3+8 (+13)		LQ0	P200		MP9	T50	TP19	P22DH(M)	TE1 TM6	1			CW9 CW10		268

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1018	CHLORODIFLUORO-METHANE (REFRIGERANT GAS R 22)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1020	CHLOROPENTAFLUORO-ETHANE (REFRIGERANT GAS R 115)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1021	1-CHLORO-1,2,2, 2-TETRA-FLUOROETHANE (REFRIGERANT GAS R 124)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1022	CHLOROTRIFLUORO-METHANE (REFRIGERANT GAS R 13)	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1023	COAL GAS, COMPRESSED	2	1TF		2.3+2.1 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		263
1026	CYANOGEN	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		263
1027	CYCLOPROPANE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1028	DICHLORODIFLUORO-METHANE (REFRIGERANT GAS R 12)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1029	DICHLOROFLUORO-METHANE (REFRIGERANT GAS R 21)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1030	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1032	DIMETHYLAMINE, ANHYDROUS	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1033	DIMETHYL ETHER	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1035	ETHANE	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
1036	ETHYLAMINE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1037	ETHYL CHLORIDE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1038	ETHYLENE, REFRIGERATED LIQUID	2	3F		2.1 (+13)		LQ0	P203		MP9	T75		RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
1039	ETHYL METHYL ETHER	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
1040	ETHYLENE OXIDE	2	2TF		2.3+2.1		LQ0	P200		MP9					1			CW9 CW10		263
1040	ETHYLENE OXIDE WITH NITROGEN up to a total pressure of 1 MPa (10 bar) at 50 °C	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9	T50	TP20	PxBH(M)	TE1 TM6	1			CW9 CW10		263

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1041	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 9 % but not more than 87 % ethylene oxide	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1043	FERTILIZER AMMONIATING SOLUTION with free ammonia	2			2.2	642														
1044	FIRE EXTINGUISHERS with compressed or liquefied gas	2	6A		2.2	225 594	LQ0	P003		MP9					3			CW9	CE2	20
1045	FLUORINE, COMPRESSED	2	1TOC		2.3+5.1 +8		LQ0	P200		MP9					1			CW9 CW10		265
1046	HELIUM, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1048	HYDROGEN BROMIDE, ANHYDROUS	2	2TC		2.3+8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		268
1049	HYDROGEN, COMPRESSED	2	1F		2.1 (+13)		LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1050	HYDROGEN CHLORIDE, ANHYDROUS	2	2TC		2.3+8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		268
1051	HYDROGEN CYANIDE, STABILIZED containing less than 3 % water	6.1	TF1	I	6.1+3	603	LQ0	P200		MP2					0			CW13 CW28 CW31		663
1052	HYDROGEN FLUORIDE, ANHYDROUS	8	CT1	I	8+6.1		LQ0	P200		MP2	T10	TP2	L21DH(+)	TU14 TU34 TC1 TE1 TE17 TT4 TM3 TM5	1			CW13 CW28		886
1053	HYDROGEN SULPHIDE	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9			PxDH(M)	TE1 TM6	1			CW9 CW10		263
1055	ISOBUTYLENE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1056	KRYPTON, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1057	LIGHTERS or LIGHTER REFILLS containing flammable gas	2	6F		2.1		LQ0	P205		MP9					2			CW9	CE2	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1058	LIQUEFIED GASES, non-flammable, charged with nitrogen, carbon dioxide or air	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1060	METHYLACETYLENE AND PROPADIENE, MIXTURE, STABILIZED such as mixture P1 or mixture P2	2	2F		2.1 (+13)	581	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1061	METHYLAMINE, ANHYDROUS	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1062	METHYL BROMIDE	2	2T		2.3 (+13)	23	LQ0	P200		MP9	T50		PxBH(M)	TE1 TM6	1			CW9 CW10		26
1063	METHYL CHLORIDE (REFRIGERANT GAS R 40)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1064	METHYL MERCAPTAN	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9	T50		PxDH(M)	TE1 TM6	1			CW9 CW10		263
1065	NEON, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1066	NITROGEN, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1067	DINITROGEN TETROXIDE (NITROGEN DIOXIDE)	2	2TOC		2.3+5.1 +8 (+13)		LQ0	P200		MP9	T50	TP21	PxBH	TU17 TE1 TM6	1			CW9 CW10		265
1069	NITROSYL CHLORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1070	NITROUS OXIDE	2	2O		2.2+5.1 (+13)	584	LQ0	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	25
1071	OIL GAS, COMPRESSED	2	1TF		2.3+2.1 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		263
1072	OXYGEN, COMPRESSED	2	1O		2.2+5.1 (+13)		LQ0	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	25
1073	OXYGEN, REFRIGERATED LIQUID	2	3O		2.2+5.1 (+13)		LQ0	P203		MP9	T75	TP22	RxBN	TU7 TU19 TM6	3	W5		CW9 CW11 CW30	CE2	225
1075	PETROLEUM GASES, LIQUEFIED	2	2F		2.1 (+13)	274 583 639	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1076	PHOSGENE	2	2TC		2.3+8 (+13)		LQ0	P200		MP9			P22DH	TU17 TE1 TM6	1			CW9 CW10		268
1077	PROPYLENE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1078	REFRIGERANT GAS, N.O.S., such as mixture F1, mixture F2 or mixture F3	2	2A		2.2 (+13)	274 582	LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1079	SULPHUR DIOXIDE	2	2TC		2.3+8 (+13)		LQ0	P200		MP9	T50	TP19	PxDH(M)	TE1 TM6	1			CW9 CW10		268
1080	SULPHUR HEXAFLUORIDE	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1081	TETRAFLUOROETHYLENE, STABILIZED	2	2F		2.1		LQ0	P200		MP9					2			CW9 CW10	CE3	239
1082	TRIFLUOROCHLOROETHYLENE, STABILIZED	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9	T50		PxBH(M)	TE1 TM6	1			CW9 CW10		263
1083	TRIMETHYLAMINE, ANHYDROUS	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1085	VINYL BROMIDE, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1086	VINYL CHLORIDE, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1087	VINYL METHYL ETHER, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	239
1088	ACETAL	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1089	ACETALDEHYDE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2 TP7	L4BN	TU8	1					33
1090	ACETONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1091	ACETONE OILS	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1092	ACROLEIN, STABILIZED	6.1	TF1	I	6.1+3		LQ0	P601 PR3		MP8 MP17	T14	TP2 TP7 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1093	ACRYLONITRILE, STABILIZED	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1098	ALLYL ALCOHOL	6.1	TF1	I	6.1+3		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1099	ALLYL BROMIDE	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1100	ALLYL CHLORIDE	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1104	AMYL ACETATES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1105	PENTANOLS	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP29	LGBF		2				CE7	33
1105	PENTANOLS	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1106	AMYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1106	AMYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
1107	AMYL CHLORIDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1108	1-PENTENE (n-AMYLENE)	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
1109	AMYL FORMATES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1110	n-AMYL METHYL KETONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1111	AMYL MERCAPTAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1112	AMYL NITRATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1113	AMYL NITRITE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1114	BENZENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1120	BUTANOLS	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP29	LGBF		2				CE7	33
1120	BUTANOLS	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1123	BUTYL ACETATES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1123	BUTYL ACETATES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1125	n-BUTYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1126	1-BROMOBUTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1127	CHLOROBUTANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1128	n-BUTYL FORMATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1129	BUTYRALDEHYDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1130	CAMPHOR OIL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1131	CARBON DISULPHIDE	3	FT1	I	3+6.1		LQ0	P001	PP31	MP7 MP17	T14	TP2 TP7 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1133	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L4BN		1					33
1133	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L1,5BN		1					33
1133	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001	PP1	MP19	T4	TP1 TP8	L1,5BN		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1133	ADHESIVES containing flammable liquid (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001	PP1	MP19	T4	TP1 TP8	LGBF		2				CE7	33
1133	ADHESIVES containing flammable liquid	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1133	ADHESIVES containing flammable liquid (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L4BN		3				CE4	33
1133	ADHESIVES containing flammable liquid (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L1,5BN		3				CE4	33
1133	ADHESIVES containing flammable liquid (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001	PP1	MP19	T2	TP1	LGBF		3				CE4	33
1134	CHLOROBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1135	ETHYLENE CHLOROHYDRIN	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1136	COAL TAR DISTILLATES, FLAMMABLE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1136	COAL TAR DISTILLATES, FLAMMABLE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L4BN		1					33
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L1,5BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1143	CROTONALDEHYDE, STABILIZED	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1144	CROTONYLENE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					339
1145	CYCLOHEXANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1146	CYCLOPENTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
1147	DECAHYDRON-APHTHALENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1148	DIACETONE ALCOHOL	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1148	DIACETONE ALCOHOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1149	DIBUTYL ETHERS	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1150	1,2-DICHLOROETHYLENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP2	LGBF		2				CE7	33
1152	DICHLOROPENTANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1153	ETHYLENE GLYCOL DIETHYL ETHER	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1154	DIETHYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1155	DIETHYL ETHER (ETHYL ETHER)	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L1,5BN		1					33
1156	DIETHYL KETONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1157	DIISOBUTYL KETONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1158	DIISOPROPYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1159	DIISOPROPYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1160	DIMETHYLAMINE AQUEOUS SOLUTION	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1161	DIMETHYL CARBONATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1162	DIMETHYLDICHLOROSIL-ANE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TE1 TE15	2				CE7	X338
1163	DIMETHYLHYDRAZINE, UNSYMMETRICAL	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1164	DIMETHYL SULPHIDE	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP2	L1,5BN		2				CE7	33
1165	DIOXANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1166	DIOXOLANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1167	DIVINYL ETHER, STABILIZED	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L1,5BN		1					339

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1169	EXTRACTS, AROMATIC, LIQUID (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L4BN		1					33
1169	EXTRACTS, AROMATIC, LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L1,5BN		1					33
1169	EXTRACTS, AROMATIC, LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1169	EXTRACTS, AROMATIC, LIQUID (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1169	EXTRACTS, AROMATIC, LIQUID	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1169	EXTRACTS, AROMATIC, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1169	EXTRACTS, AROMATIC, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33
1169	EXTRACTS, AROMATIC, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1170	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	F1	II	3	144	LQ4	P001 IBC02 R001	PP2	MP19	T4	TP1	LGBF		2				CE7	33
1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	F1	III	3	144	LQ7	P001 IBC03 LP01 R001	PP2	MP19	T2	TP1	LGBF		3				CE4	30
1171	ETHYLENE GLYCOL MONOETHYL ETHER	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1172	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1173	ETHYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1175	ETHYLBENZENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1176	ETHYL BORATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1177	ETHYLBUTYL ACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1178	2-ETHYLBUTYRALDEHYDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1179	ETHYL BUTYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1180	ETHYL BUTYRATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1181	ETHYL CHLOROACETATE	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
1182	ETHYL CHLOROFORMATE	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1183	ETHYLDICHLOROSILANE	4.3	WFC	I	4.3+3+8		LQ0	P401 PR2		MP2	T10	TP2 TP7 TP13	L10DH	TU14 TU23 TE1 TM2 TM3	0	W1		CW23		X338
1184	ETHYLENE DICHLORIDE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1185	ETHYLENEIMINE, STABILIZED	6.1	TF1	I	6.1+3		LQ0	P601 PR4		MP2			L15CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1188	ETHYLENE GLYCOL MONOMETHYL ETHER	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1189	ETHYLENE GLYCOL MONOMETHYL ETHER ACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1190	ETHYL FORMATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1191	OCTYL ALDEHYDES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1192	ETHYL LACTATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1193	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1194	ETHYL NITRITE SOLUTION	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1195	ETHYL PROPIONATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1196	ETHYLTRICHLOROSILANE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TE1 TE15	2				CE7	X338
1197	EXTRACTS, FLAVOURING, LIQUID (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L4BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1197	EXTRACTS, FLAVOURING, LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L1,5BN		1					33
1197	EXTRACTS, FLAVOURING, LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1197	EXTRACTS, FLAVOURING, LIQUID (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1197	EXTRACTS, FLAVOURING, LIQUID	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1197	EXTRACTS, FLAVOURING, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33
1197	EXTRACTS, FLAVOURING, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1197	EXTRACTS, FLAVOURING, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1198	FORMALDEHYDE SOLUTION, FLAMMABLE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
1199	FURALDEHYDES	6.1	TF1	II	6.1+3		LQ0	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
1201	FUSEL OIL	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1201	FUSEL OIL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1202	GAS OIL or DIESEL FUEL or HEATING OIL LIGHT (flash-point not more than 61 °C)	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1202	DIESEL FUEL complying with standard EN 590:1993 or GAS OIL or HEATING OIL LIGHT with a flash -point as specified in EN 590:1993	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description 3.1.2	Class 2.2	Classification Code 2.2	Packing Group 2.1.1.3	Labels 5.2.2	Special Provisions 3.3	Limited Quantities 3.4.6	Packaging: Instructions 4.1.4	Packaging: Special Provisions 4.1.4	Packaging: Mixed Packing 4.1.10	Portable tanks: Tank Instructions 4.2.4.2	Portable tanks: Special Provisions 4.2.4.3	RID tanks: Tank Code 4.3	RID tanks: Special Provisions 4.3.5/ 6.8.4	Transport Category 1.1.3.1(c)	Special transport provisions: Packages 7.2.4	Special transport provisions: Bulk 7.3.3	Special transport provisions: Loading, unloading & handling 7.5.11	Colis Express 7.6	Hazard Identification Number 5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1202	GAS OIL or DIESEL FUEL or HEATING OIL LIGHT (flash-point more than 61 °C and not more than 100 °C)	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBV		3				CE4	30
1203	MOTOR SPIRIT or GASOLINE or PETROL	3	F1	II	3	534	LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF	TU9	2				CE7	33
1204	NITROGLYCERIN SOLUTION IN ALCOHOL with not more than 1 % nitroglycerin	3	D	II	3		LQ0	P001 IBC02	PP5	MP2					2				CE7	33
1206	HEPTANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1207	HEXALDEHYDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1208	HEXANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	163 640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L4BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	163 640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L1,5BN		1					33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	163 640	LQ6	P001	PP1	MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	163 640	LQ6	P001 IBC02 R001	PP1	MP19	T4	TP1 TP8	LGBF		2				CE7	33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	F1	III	3	163 640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	163 640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L4BN		3				CE4	33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	163 640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L1,5BN		3				CE4	33
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	163 640	LQ7	P001 IBC02 LP01 R001	PP1	MP19	T2	TP1	LGBF		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1212	ISOBUTANOL (ISOBUTYL ALCOHOL)	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1213	ISOBUTYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1214	ISOBUTYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1216	ISOOCTENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1218	ISOPRENE, STABILIZED	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L1,5BN		1					339
1219	ISOPROPANOL (ISOPROPYL ALCOHOL)	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1220	ISOPROPYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1221	ISOPROPYLAMINE	3	FC	I	3+8		LQ3	P001		MP7 MP17	T11	TP2	L10CH	TU14 TE1	1					338
1222	ISOPROPYL NITRATE	3	F1	II	3		LQ4	P001 IBC02 R001	B7	MP19					2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1223	KEROSENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP2	LGBF		3				CE4	30
1224	KETONES, LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
1224	KETONES, LIQUID, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
1224	KETONES, LIQUID, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	274	LQ0	P001 IBC02		MP19	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1	274	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1229	MESITYL OXIDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1230	METHANOL	3	FT1	II	3+6.1	279	LQ0	P001 IBC02		MP19	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1231	METHYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1233	METHYLAMYL ACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1234	METHYLAL	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP2	L1,5BN		2				CE7	33
1235	METHYLAMINE, AQUEOUS SOLUTION	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1237	METHYL BUTYRATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1238	METHYL CHLORO-FORMATE	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1239	METHYL CHLOROMETHYL ETHER	6.1	TF1	I	6.1+3		LQ0	P602		MP8 MP17	T14	TP2	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1242	METHYLDICHLOROSILANE	4.3	WFC	I	4.3+3+8		LQ0	P401 PR2		MP2	T10	TP2 TP7 TP13	L10DH	TU14 TU24 TE1 TM2 TM3	0	W1		CW23		X338
1243	METHYL FORMATE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
1244	METHYLHYDRAZINE	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
1245	METHYL ISOBUTYL KETONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1246	METHYL ISOPROPENYL KETONE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
1247	METHYL METHACRYLATE MONOMER, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
1248	METHYL PROPIONATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1249	METHYL PROPYL KETONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1250	METHYLTRICHLOROSIL-ANE	3	FC	I	3+8		LQ3	P001		MP7 MP17	T11	TP2 TP13	L10CH	TU14 TE1	1					X338
1251	METHYL VINYL KETONE, STABILIZED	6.1	TFC	I	6.1+3+8		LQ0	P601 PR3		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		639
1259	NICKEL CARBONYL	6.1	TF1	I	6.1+3		LQ0	P601 PR3		MP2			L15CH	TU14 TU15 TU31 TE1 TM3	1			CW13 CW28 CW31		663
1261	NITROMETHANE	3	F1	II	3		LQ4	P001 R001	RR2	MP19					2				CE7	33
1262	OCTANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	163 640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L1,5BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	163 640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L4BN		1					33
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	163 640	LQ6	P001	PP1	MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	163 640	LQ6	P001 IBC02 R001	PP1	MP19	T4	TP1 TP8	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound)	3	F1	III	3	163 640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4)	3	F1	III	3	163 640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L4BN		3				CE4	33
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4)	3	F1	III	3	163 640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L1,5BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) (having a flash-point below 23 °C and viscous according to 2.2.3.1.4)	3	F1	III	3	163 640	LQ7	P001 IBC02 LP01 R001	PP1	MP19	T2	TP1	LGBF		3				CE4	33
1264	PARALDEHYDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1265	PENTANES, liquid	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
1265	PENTANES, liquid	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T4	TP1	L1,5BN		2				CE7	33
1266	PERFUMERY PRODUCTS with flammable solvents (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L4BN		1					33
1266	PERFUMERY PRODUCTS with flammable solvents (vapour pressureat 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L1,5BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1266	PERFUMERY PRODUCTS with flammable solvents (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1266	PERFUMERY PRODUCTS with flammable solvents (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1266	PERFUMERY PRODUCTS with flammable solvents (non viscous)	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1266	PERFUMERY PRODUCTS with flammable solvents (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33
1266	PERFUMERY PRODUCTS with flammable solvents (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1266	PERFUMERY PRODUCTS with flammable solvents (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1267	PETROLEUM CRUDE OIL (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L4BN		1					33
1267	PETROLEUM CRUDE OIL (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L1,5BN		1					33
1267	PETROLEUM CRUDE OIL (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ4	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1267	PETROLEUM CRUDE OIL (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ4	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1267	PETROLEUM CRUDE OIL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP9	L4BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP9	L1,5BN		1					33
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP9 TP28	LGBF		2				CE7	33
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP9 TP28	L1,5BN		2				CE7	33
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP9 TP29	LGBF		3				CE4	30
1272	PINE OIL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1274	n-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1274	n-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1275	PROPIONALDEHYDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
1276	n-PROPYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1277	PROPYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1278	PROPYL CHLORIDE	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP2	L1,5BN		2				CE7	33
1279	1,2-DICHLOROPROPANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1280	PROPYLENE OXIDE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2 TP7	L1,5BN		1					33
1281	PROPYL FORMATES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1282	PYRIDINE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP2	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1286	ROSIN OIL (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L4BN		1					33
1286	ROSIN OIL (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L1,5BN		1					33
1286	ROSIN OIL (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1	L1,5BN		2				CE7	33
1286	ROSIN OIL (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1286	ROSIN OIL	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1286	ROSIN OIL (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33
1286	ROSIN OIL (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1286	ROSIN OIL (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1287	RUBBER SOLUTION (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L4BN		1					33
1287	RUBBER SOLUTION (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17			L1,5BN		1					33
1287	RUBBER SOLUTION (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1287	RUBBER SOLUTION (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1287	RUBBER SOLUTION	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1287	RUBBER SOLUTION (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1287	RUBBER SOLUTION (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33
1287	RUBBER SOLUTION (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1288	SHALE OIL	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1288	SHALE OIL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1289	SODIUM METHYLATE SOLUTION in alcohol	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1 TP8	L4BH	TE1 TE15	2				CE7	338
1289	SODIUM METHYLATE SOLUTION in alcohol	3	FC	III	3+8		LQ7	P001 IBC02 R001		MP19	T4	TP1	L4BN		3				CE4	38
1292	TETRAETHYL SILICATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1293	TINCTURES, MEDICINAL	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1293	TINCTURES, MEDICINAL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1294	TOLUENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1295	TRICHLOROSILANE	4.3	WFC	I	4.3+3+8		LQ0	P401 PR2		MP2	T14	TP2 TP7 TP13	L10DH	TU14 TU25 TE1 TM2 TM3	0	W1		CW23		X338
1296	TRIETHYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50 % trimethylamine, by mass	3	FC	I	3+8		LQ3	P001		MP7 MP17	T11	TP1	L10CH	TU14 TE1	1					338
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50 % trimethylamine, by mass	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50 % trimethylamine, by mass	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T7	TP1	L4BN		3				CE4	38
1298	TRIMETHYLCHLOROSILANE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TE1 TE15	2				CE7	X338
1299	TURPENTINE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1300	TURPENTINE SUBSTITUTE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1300	TURPENTINE SUBSTITUTE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1301	VINYL ACETATE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
1302	VINYL ETHYL ETHER, STABILIZED	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L1,5BN		1					339
1303	VINYLIDENE CHLORIDE, STABILIZED	3	F1	I	3		LQ3	P001		MP7 MP17	T12	TP2 TP7	L4BN		1					339

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1304	VINYL ISOBUTYL ETHER, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
1305	VINYLTRICHLOROSILANE, STABILIZED	3	FC	I	3+8		LQ3	P001		MP7 MP17	T11	TP2 TP13	L10CH	TU14 TE1	1					X338
1306	WOOD PRESERVATIVES, LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1306	WOOD PRESERVATIVES, LIQUID (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1306	WOOD PRESERVATIVES, LIQUID	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1306	WOOD PRESERVATIVES, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L4BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1306	WOOD PRESERVATIVES, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T2	TP1	L1,5BN		3				CE4	33
1306	WOOD PRESERVATIVES, LIQUID (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	33
1307	XYLENES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
1307	XYLENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001	PP33	MP7 MP17			L4BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001	PP33	MP7 MP17			L1,5BN		1					33
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ4	P001 R001	PP33	MP19			L1,5BN		2				CE7	33
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ4	P001 R001	PP33	MP19			LGBF		2				CE7	33
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID	3	F1	III	3		LQ7	P001 R001		MP19			LGBF		3				CE4	30
1309	ALUMINIUM POWDER, COATED	4.1	F3	II	4.1		LQ8	P002 IBC08	PP38 B2 B4	MP11			SGAN		2	W1			CE10	40
1309	ALUMINIUM POWDER, COATED	4.1	F3	III	4.1		LQ9	P002 IBC08 LP02 R001	PP11 B3	MP11			SGAV		3	W1	VW1		CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1310	AMMONIUM PICRATE, WETTED with not less than 10 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40
1312	BORNEOL	4.1	F1	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAV		3	W1	VW1		CE11	40
1313	CALCIUM RESINATE	4.1	F3	III	4.1		LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40
1314	CALCIUM RESINATE, FUSED	4.1	F3	III	4.1		LQ9	P002 IBC04 R001		MP11			SGAV		3	W1	VW1		CE11	40
1318	COBALT RESINATE, PRECIPITATED	4.1	F3	III	4.1		LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40
1320	DINITROPHENOL, WETTED with not less than 15 % water, by mass	4.1	DT	I	4.1+6.1		LQ0	P406	PP26	MP2					1	W1		CW28		46
1321	DINITROPHENOLATES, WETTED with not less than 15 % water, by mass	4.1	DT	I	4.1+6.1		LQ0	P406	PP26	MP2					1	W1		CW28		46
1322	DINITRORESORCINOL, WETTED with not less than 15 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1323	FERROCERIUM	4.1	F3	II	4.1	249	LQ8	P002 IBC08	B2 B4	MP11			SGAN		2	W1			CE10	40
1324	FILMS, NITROCELLULOSE BASE, gelatin coated, except scrap	4.1	F1	III	4.1		LQ9	P002 R001	PP15	MP11					3	W1			CE11	40
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	F1	II	4.1	274	LQ8	P002 IBC08	B2 B4	MP10	T3	TP1	SGAN		2	W1			CE10	40
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	F1	III	4.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10	T1	TP1	SGAV		3	W1	VW1		CE11	40
1326	HAFNIUM POWDER, WETTED with not less than 25 % water	4.1	F3	II	4.1	586	LQ8	P410 IBC06	PP40 B2	MP11			SGAN		2	W1			CE10	40
1327	Hay, Straw or Bhusa	4.1	F1		EXEMPT															
1328	HEXAMETHYLENETETRAMINE	4.1	F1	III	4.1		LQ9	P002 IBC08 R001	B3	MP10			SGAV		3	W1	VW1		CE11	40
1330	MANGANESE RESINATE	4.1	F3	III	4.1		LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40
1331	MATCHES, 'STRIKE ANYWHERE'	4.1	F1	III	4.1	293	LQ9	P407	PP27	MP12					4	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1332	METALDEHYDE	4.1	F1	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAV		3	W1	VW1		CE11	40
1333	CERIUM, slabs, ingots or rods	4.1	F3	II	4.1		LQ8	P002 IBC08	B2 B4	MP11					2	W1			CE10	40
1334	NAPHTHALENE, CRUDE or NAPHTHALENE, REFINED	4.1	F1	III	4.1	501	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAV		3	W1	VW2		CE11	40
1336	NITROGUANIDINE (PICRITE), WETTED with not less than 20 % water, by mass	4.1	D	I	4.1		LQ0	P406		MP2					1	W1				40
1337	NITROSTARCH, WETTED with not less than 20 % water, by mass	4.1	D	I	4.1		LQ0	P406		MP2					1	W1				40
1338	PHOSPHORUS, AMORPHOUS	4.1	F3	III	4.1		LQ9	P410 IBC08 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
1339	PHOSPHORUS HEPTASULPHIDE, free from yellow and white phosphorus	4.1	F3	II	4.1	602	LQ8	P410 IBC04		MP11			SGAN		2	W1			CE10	40
1340	PHOSPHORUS PENTASULPHIDE, free from yellow and white phosphorus	4.3	WF2	II	4.3+4.1	602	LQ11	P410 IBC04		MP14			SGAN		0	W1		CW23	CE10	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1341	PHOSPHORUS SESQUISULPHIDE, free from yellow and white phosphorus	4.1	F3	II	4.1	602	LQ8	P410 IBC04		MP11			SGAN		2	W1			CE10	40
1343	PHOSPHORUS TRISULPHIDE, free from yellow and white phosphorus	4.1	F3	II	4.1	602	LQ8	P410 IBC04		MP11			SGAN		2	W1			CE10	40
1344	TRINITROPHENOL, WETTED with not less than 30 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40
1345	RUBBER SCRAP or RUBBER SHODDY, powdered or granulated	4.1	F1	II	4.1		LQ8	P002 IBC08	B2 B4	MP11			SGAN		4	W1			CE10	40
1346	SILICON POWDER, AMORPHOUS	4.1	F3	III	4.1	32	LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
1347	SILVER PICRATE, WETTED with not less than 30 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP25 PP26	MP2					1	W1				40
1348	SODIUM DINITRO-o-CRESOLATE, WETTED with not less than 15 % water, by mass	4.1	DT	I	4.1+6.1		LQ0	P406	PP26	MP2					1	W1		CW28		46
1349	SODIUM PICRAMATE, WETTED with not less than 20 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1350	SULPHUR	4.1	F3	III	4.1	242	LQ9	P002 IBC08 LP02 R001	B3	MP11	T1	TP1	SGAV		3	W1	VW1		CE11	40
1352	TITANIUM POWDER, WETTED with not less than 25 % water	4.1	F3	II	4.1	586	LQ8	P410 IBC06	PP40 B2	MP11			SGAN		2	W1			CE10	40
1353	FIBRES or FABRICS IMPREGNATED WITH WEAKLY NITRATED NITROCELLULOSE, N.O.S.	4.1	F1	III	4.1	274 502	LQ9	P410 IBC08 R001	B3	MP11					3	W1			CE11	40
1354	TRINITROBENZENE, WETTED with not less than 30 % water, by mass	4.1	D	I	4.1		LQ0	P406		MP2					1	W1				40
1355	TRINITROBENZOIC ACID, WETTED with not less than 30 % water, by mass	4.1	D	I	4.1		LQ0	P406		MP2					1	W1				40
1356	TRINITROTOLUENE (TNT), WETTED with not less than 30 % water, by mass	4.1	D	I	4.1		LQ0	P406		MP2					1	W1				40
1357	UREA NITRATE, WETTED with not less than 20 % water, by mass	4.1	D	I	4.1	227	LQ0	P406		MP2					1	W1				40
1358	ZIRCONIUM POWDER, WETTED with not less than 25 % water	4.1	F3	II	4.1	586	LQ8	P410 IBC06	PP40 B2	MP11			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1360	CALCIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
1361	CARBON, animal or vegetable origin	4.2	S2	II	4.2		LQ0	P002 IBC06	PP12	MP14			SGAN	TU11	2	W1			CE10	40
1361	CARBON, animal or vegetable origin	4.2	S2	III	4.2		LQ0	P002 IBC08 LP02 R001	PP12 B3	MP14			SGAV		4	W1	VW4		CE11	40
1362	CARBON, ACTIVATED	4.2	S2	III	4.2		LQ0	P002 IBC08 LP02 R001	PP11 B3	MP14			SGAV		4	W1	VW4		CE11	40
1363	COPRA	4.2	S2	III	4.2		LQ0	P003 IBC08 LP02 R001	PP20 B3 B6	MP14					3	W1	VW4		CE11	40
1364	COTTON WASTE, OILY	4.2	S2	III	4.2		LQ0	P003 IBC08 LP02 R001	PP19 B6	MP14					3	W1	VW4		CE11	40
1365	COTTON, WET	4.2	S2	III	4.2		LQ0	P003 IBC08 LP02 R001	PP19 B6	MP14					3	W1	VW4		CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1366	DIETHYLZINC	4.2	SW	I	4.2+4.3		LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
1369	p-NITROSODIMETHYLANILINE	4.2	S2	II	4.2		LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
1370	DIMETHYLZINC	4.2	SW	I	4.2+4.3		LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
1373	FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil	4.2	S2	III	4.2	274	LQ0	P410 IBC08 R001	B3	MP14					3	W1	VW4		CE11	40
1374	FISH MEAL (FISH SCRAP), UNSTABILIZED	4.2	S2	II	4.2		LQ0	P410 IBC08	B2	MP14					2	W1			CE10	40
1376	IRON OXIDE, SPENT or IRON SPONGE, SPENT obtained from coal gas purification	4.2	S4	III	4.2	592	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAV		3	W1	VW4		CE11	40
1378	METAL CATALYST, WETTED with a visible excess of liquid	4.2	S4	II	4.2	274	LQ0	P410 IBC01	PP39	MP14			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1379	PAPER, UNSATURATED OIL TREATED, incompletely dried (including carbon paper)	4.2	S2	III	4.2		LQ0	P410 IBC08 R001	B3	MP14					3	W1	VW4		CE11	40
1380	PENTABORANE	4.2	ST3	I	4.2+6.1		LQ0	P601 PR1		MP2			L21DH	TU14 TC1 TE1 TM1	0	W1		CW28		333
1381	PHOSPHORUS, WHITE or YELLOW, UNDER WATER or IN SOLUTION	4.2	ST3	I	4.2+6.1	503	LQ0	P405		MP2	T9	TP3	L10DH(+)	TU14 TU16 TU21 TE3	0	W1		CW28		46
1381	PHOSPHORUS, WHITE or YELLOW, DRY	4.2	ST4	I	4.2+6.1	503	LQ0	P405		MP2	T9	TP3	L10DH(+)	TU14 TU16 TU21 TE3	0	W1		CW28		46
1382	POTASSIUM SULPHIDE, ANHYDROUS or POTASSIUM SULPHIDE with less than 30 % water of crystallization	4.2	S4	II	4.2	504	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
1383	PYROPHORIC METAL, N.O.S. or PYROPHORIC ALLOY, N.O.S.	4.2	S4	I	4.2	274	LQ0	P404		MP13					0	W1				43
1384	SODIUM DITHIONITE (SODIUM HYDROSULPHITE)	4.2	S4	II	4.2		LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
1385	SODIUM SULPHIDE, ANHYDROUS or SODIUM SULPHIDE with less than 30 % water of crystallization	4.2	S4	II	4.2	504	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1386	SEED CAKE with more than 1,5 % oil and not more than 11 % moisture	4.2	S2	III	4.2	36	LQ0	P003 IBC08 LP02 R001	PP20 B3 B6	MP14					3	W1	VW4		CE11	40
1389	ALKALI METAL AMALGAM	4.3	W2	I	4.3	182 274	LQ0	P402 P403 PR1		MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1390	ALKALI METAL AMIDES	4.3	W2	II	4.3	182 274 505	LQ11	P410 IBC07	B2	MP14			SGAN		0	W1		CW23	CE10	423
1391	ALKALI METAL DISPERSION or ALKALINE EARTH METAL DISPERSION	4.3	W1	I	4.3	182 183 274 282 506	LQ0	P402 PR1		MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1392	ALKALINE EARTH METAL AMALGAM	4.3	W2	I	4.3	183 274 506	LQ0	P402 P403 IBC04	B1	MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1393	ALKALINE EARTH METAL ALLOY, N.O.S.	4.3	W2	II	4.3	183 274 506	LQ11	P410 IBC07	B2	MP15			SGAN		2	W1		CW23	CE7	423
1394	ALUMINIUM CARBIDE	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1	VW5	CW23	CE10	423
1395	ALUMINIUM FERROSILICON POWDER	4.3	WT2	II	4.3+6.1		LQ11	P410 IBC05	PP40 B2	MP14			SGAN		2	W1		CW23 CW28	CE10	462
1396	ALUMINIUM POWDER, UNCOATED	4.3	W2	II	4.3		LQ12	P410 IBC07	PP40 B2	MP14			SGAN		2	W1		CW23	CE10	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1396	ALUMINIUM POWDER, UNCOATED	4.3	W2	III	4.3		LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
1397	ALUMINIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1	507	LQ0	P403		MP2					1	W1		CW23 CW28		X462
1398	ALUMINIUM SILICON POWDER, UNCOATED	4.3	W2	III	4.3	37	LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
1400	BARIUM	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
1401	CALCIUM	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
1402	CALCIUM CARBIDE	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2					1	W1		CW23		X423
1402	CALCIUM CARBIDE	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1	VW5	CW23	CE10	423
1403	CALCIUM CYANAMIDE with more than 0,1 % calcium carbide	4.3	W2	III	4.3	38	LQ12	P410 IBC08 R001	B4	MP14			SGAN		0	W1		CW23	CE11	423
1404	CALCIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1405	CALCIUM SILICIDE	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1	VW7	CW23	CE10	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1405	CALCIUM SILICIDE	4.3	W2	III	4.3		LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5 VW7	CW23	CE11	423
1407	CAESIUM	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2			L10CH(+)	TU2 TU14 TE5 TM2 TT3	1	W1		CW23		X423
1408	FERROSILICON with 30 % or more but less than 90 % silicon	4.3	WT2	III	4.3+6.1	39	LQ12	P003 IBC08 R001	PP20 B4	MP14			SGAN		3	W1	VW1 VW7	CW23 CW28	CE11	462
1409	METAL HYDRIDES, WATER-REACTIVE, N.O.S.	4.3	W2	I	4.3	222 274 508	LQ0	P403		MP2					1	W1		CW23		X423
1409	METAL HYDRIDES, WATER-REACTIVE, N.O.S.	4.3	W2	II	4.3	222 274 508	LQ11	P410 IBC04		MP14			SGAN		2	W1		CW23	CE10	423
1410	LITHIUM ALUMINIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1411	LITHIUM ALUMINIUM HYDRIDE, ETHEREAL	4.3	WF1	I	4.3+3		LQ0	P402 PR1		MP2					1	W1		CW23		X323
1413	LITHIUM BOROHYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1414	LITHIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1415	LITHIUM	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1417	LITHIUM SILICON	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	WS	I	4.3+4.2		LQ0	P403		MP2					1	W1		CW23		X423
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	WS	II	4.3+4.2		LQ11	P410 IBC05	B2	MP14			SGAN		2	W1		CW23	CE10	423
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	WS	III	4.3+4.2		LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
1419	MAGNESIUM ALUMINIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
1420	POTASSIUM METAL ALLOYS	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1421	ALKALI METAL ALLOY, LIQUID, N.O.S.	4.3	W1	I	4.3	182 274	LQ0	P402 PR1		MP2			L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1422	POTASSIUM SODIUM ALLOYS	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2	T9	TP3 TP7	L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1423	RUBIDIUM	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2			L10CH(+)	TU2 TU14 TE5 TM2 TT3	1	W1		CW23		X423
1426	SODIUM BOROHYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1427	SODIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1428	SODIUM	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2	T9	TP3 TP7	L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
1431	SODIUM METHYLATE	4.2	SC4	II	4.2+8		LQ0	P410 IBC05	B2	MP14			SGAN		2	W1			CE10	48
1432	SODIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
1433	STANNIC PHOSPHIDES	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
1435	ZINC ASHES	4.3	W2	III	4.3		LQ12	P002 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
1436	ZINC POWDER or ZINC DUST	4.3	WS	I	4.3+4.2		LQ0	P403		MP2					1	W1		CW23		X423
1436	ZINC POWDER or ZINC DUST	4.3	WS	II	4.3+4.2		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1436	ZINC POWDER or ZINC DUST	4.3	WS	III	4.3+4.2		LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
1437	ZIRCONIUM HYDRIDE	4.1	F3	II	4.1		LQ8	P410 IBC04	PP40	MP11			SGAN		2	W1			CE10	40
1438	ALUMINIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1439	AMMONIUM DICHROMATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24	CE10	50
1442	AMMONIUM PERCHLORATE	5.1	O2	II	5.1	152	LQ10	P002 IBC06	B2	MP2					2	W6	VW8	CW24	CE10	50
1444	AMMONIUM PERSULPHATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1445	BARIUM CHLORATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2	T4	TP1	SGAN	TU3	2			CW24 CW28	CE10	56
1446	BARIUM NITRATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
1447	BARIUM PERCHLORATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2	T4	TP1	SGAN	TU3	2			CW24 CW28	CE10	56

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1448	BARIUM PERMANGANATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
1449	BARIUM PEROXIDE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
1450	BROMATES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274 604	LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1451	CAESIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1452	CALCIUM CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1453	CALCIUM CHLORITE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24	CE10	50
1454	CALCIUM NITRATE	5.1	O2	III	5.1	208	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1455	CALCIUM PERCHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1456	CALCIUM PERMANGA-NATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1457	CALCIUM PEROXIDE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1458	CHLORATE AND BORATE MIXTURE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1458	CHLORATE AND BORATE MIXTURE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAV	TU3	3		VW8	CW24	CE11	50
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2	T4	TP1	SGAV	TU3	2		VW8	CW24	CE10	50
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP2	T4	TP1	SGAV	TU3	3		VW8	CW24	CE11	50
1461	CHLORATES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274 605	LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1462	CHLORITES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274 509 606	LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	OC2	II	5.1+8	510	LQ11	P002 IBC08	B4	MP2			SGAN	TU3	2			CW24	CE10	58
1465	DIDYMIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1466	FERRIC NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1467	GUANIDINE NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1469	LEAD NITRATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
1470	LEAD PERCHLORATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2	T4	TP1	SGAN	TU3	2			CW24 CW28	CE10	56
1471	LITHIUM HYPOCHLORITE, DRY or LITHIUM HYPOCHLORITE MIXTURE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP10			SGAN	TU3	2			CW24	CE10	50
1472	LITHIUM PEROXIDE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1473	MAGNESIUM BROMATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1474	MAGNESIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1475	MAGNESIUM PERCHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1476	MAGNESIUM PEROXIDE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1477	NITRATES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274 511	LQ11	P002 IBC08	B2 B4	MP10			SGAN	TU3	2			CW24	CE10	50
1477	NITRATES, INORGANIC, N.O.S.	5.1	O2	III	5.1	274 511	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1479	OXIDIZING SOLID, N.O.S.	5.1	O2	I	5.1	274	LQ0	P503 IBC05	B1	MP2					1			CW24		55
1479	OXIDIZING SOLID, N.O.S.	5.1	O2	II	5.1	274	LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24	CE10	50
1479	OXIDIZING SOLID, N.O.S.	5.1	O2	III	5.1	274	LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAN	TU3	3			CW24	CE11	50
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274	LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1	O2	III	5.1	274	LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAV	TU3	3		VW8	CW24	CE11	50
1482	PERMANGANATES, INORGANIC, . N.O.S	5.1	O2	II	5.1	274 608	LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1482	PERMANGANATES, INORGANIC, N.O.S.	5.1	O2	III	5.1	274 208	LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAN	TU3	3			CW24	CE11	50
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274	LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	O2	III	5.1	274	LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAN	TU3	3			CW24	CE11	50
1484	POTASSIUM BROMATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1485	POTASSIUM CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1486	POTASSIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1487	POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE	5.1	O2	II	5.1	607	LQ11	P002 IBC08	B4	MP10			SGAV	TU3	2		VW8	CW24	CE10	50
1488	POTASSIUM NITRITE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP10			SGAV	TU3	2		VW8	CW24	CE10	50
1489	POTASSIUM PERCHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1490	POTASSIUM PERMANGANATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAN	TU3	2			CW24	CE10	50
1491	POTASSIUM PEROXIDE	5.1	O2	I	5.1		LQ0	P503 IBC06	B1	MP2					1			CW24		55
1492	POTASSIUM PERSULPHATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1493	SILVER NITRATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP10			SGAV	TU3	2		VW8	CW24	CE10	50
1494	SODIUM BROMATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1495	SODIUM CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1496	SODIUM CHLORITE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24	CE10	50
1498	SODIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1499	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1500	SODIUM NITRITE	5.1	OT2	III	5.1+6.1		LQ12	P002 IBC08 R001	B3	MP10			SGAN	TU3	3			CW24 CW28	CE11	56

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1502	SODIUM PERCHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1503	SODIUM PERMANGANATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1504	SODIUM PEROXIDE	5.1	O2	I	5.1		LQ0	P503 IBC05	B1	MP2					1			CW24		55
1505	SODIUM PERSULPHATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1506	STRONTIUM CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1507	STRONTIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1508	STRONTIUM PERCHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1509	STRONTIUM PEROXIDE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1510	TETRANITROMETHANE	5.1	OT1	I	5.1+6.1	609	LQ0	P602		MP2			L4BN	TU3 TU28	1	W5		CW24 CW28		559
1511	UREA HYDROGEN PEROXIDE	5.1	OC2	III	5.1+8		LQ12	P002 IBC08 R001	B3	MP2			SGAN	TU3	3			CW24	CE11	58

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1512	ZINC AMMONIUM NITRITE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP10			SGAN	TU3	2			CW24	CE10	50
1513	ZINC CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
1514	ZINC NITRATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP10			SGAN	TU3	2			CW24	CE10	50
1515	ZINC PERMANGANATE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1516	ZINC PEROXIDE	5.1	O2	II	5.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	50
1517	ZIRCONIUM PICRAMATE, WETTED with not less than 20 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40
1541	ACETONE CYANOHYDRIN, STABILIZED	6.1	T1	I	6.1		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		669
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOID SALTS, SOLID, N.O.S.	6.1	T2	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOID SALTS, SOLID, N.O.S.	6.1	T2	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOID SALTS, SOLID, N.O.S.	6.1	T2	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1545	ALLYL ISOTHIOCYANATE, STABILIZED	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	639
1546	AMMONIUM ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1547	ANILINE	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1548	ANILINE HYDROCHLORIDE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1549	ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S.	6.1	T5	III	6.1	45 274 512	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1550	ANTIMONY LACTATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1551	ANTIMONY POTASSIUM TARTRATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1553	ARSENIC ACID, LIQUID	6.1	T4	I	6.1		LQ0	P001		MP8 MP17	T20	TP2 TP7 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1554	ARSENIC ACID, SOLID	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1555	ARSENIC BROMIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1556	ARSENIC COMPOUND, LIQUID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	T4	I	6.1	43 274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1556	ARSENIC COMPOUND, LIQUID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	T4	II	6.1	43 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1556	ARSENIC COMPOUND, LIQUID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	T4	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1557	ARSENIC COMPOUND, SOLID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	T5	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66
1557	ARSENIC COMPOUND, SOLID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	T5	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1557	ARSENIC COMPOUND, SOLID, N.O.S., inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s and Arsenic sulphides, n.o.s.	6.1	T5	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1558	ARSENIC	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1559	ARSENIC PENTOXIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1560	ARSENIC TRICHLORIDE	6.1	T4	I	6.1		LQ0	P602		MP18	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1561	ARSENIC TRIOXIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1562	ARSENICAL DUST	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1564	BARIUM COMPOUND, N.O.S.	6.1	T5	II	6.1	177 274 513 587	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1564	BARIUM COMPOUND, N.O.S.	6.1	T5	III	6.1	177 274 513 587	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1565	BARIUM CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1566	BERYLLIUM COMPOUND, N.O.S	6.1	T5	II	6.1	274 514	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1566	BERYLLIUM COMPOUND, N.O.S.	6.1	T5	III	6.1	274 514	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1567	BERYLLIUM POWDER	6.1	TF3	II	6.1+4.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	64
1569	BROMOACETONE	6.1	TF1	II	6.1+3		LQ17	P602		MP15	T10	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
1570	BRUCINE	6.1	T2	I	6.1	43	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1571	BARIUM AZIDE, WETTED with not less than 50 % water, by mass	4.1	DT	I	4.1+6.1	568	LQ0	P406		MP2					1	W1		CW28		46
1572	CACODYLIC ACID	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1573	CALCIUM ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1574	CALCIUM ARSENATE AND CALCIUM ARSENITE MIXTURE, SOLID	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1575	CALCIUM CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1577	CHLORODINITROBENZENES, LIQUID	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1577	CHLORODINITROBENZENES, SOLID	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1578	CHLORONITROBENZENES, solid	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1578	CHLORONITROBENZENES, liquid	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1579	4-CHLORO-o-TOLUIDINE HYDROCHLORIDE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1580	CHLOROPICRIN	6.1	T1	I	6.1		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1581	CHLOROPICRIN AND METHYL BROMIDE MIXTURE	2	2T		2.3 (+13)		LQ0	P200		MP9	T50		PxBH(M)	TE1 TM6	1			CW9 CW10		26
1582	CHLOROPICRIN AND METHYL CHLORIDE MIXTURE	2	2T		2.3 (+13)		LQ0	P200		MP9	T50		PxBH(M)	TE1 TM6	1			CW9 CW10		26
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	T1	I	6.1	274 515	LQ0	P602		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	T1	II	6.1	274 515	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	T1	III	6.1	274 515	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1585	COPPER ACETOARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1586	COPPER ARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1587	COPPER CYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	T5	I	6.1	47 274	LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31	CE13	66
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	T5	II	6.1	47 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	T5	III	6.1	47 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1589	CYANOGEN CHLORIDE, STABILIZED	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
1590	DICHLOROANILINES, LIQUID	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1590	DICHLOROANILINES, SOLID	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1591	o-DICHLOROBENZENE	6.1	T1	III	6.1	279	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1593	DICHLOROMETHANE	6.1	T1	III	6.1	516	LQ19	P001 IBC03 LP01 R001	B8	MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1594	DIETHYL SULPHATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1595	DIMETHYL SULPHATE	6.1	TC1	I	6.1+8		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
1596	DINITROANILINES	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1597	DINITROBENZENES, LIQUID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1597	DINITROBENZENES, SOLID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1598	DINITRO-o-CRESOL	6.1	T2	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1599	DINITROPHENOL SOLUTION	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1599	DINITROPHENOL SOLUTION	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1600	DINITROTOLUENES, MOLTEN	6.1	T1	II	6.1		LQ0				T7	TP3	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31		60
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	T2	I	6.1	274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	T2	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	T2	III	6.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	T1	I	6.1	274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	T1	II	6.1	274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	T1	III	6.1	274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1603	ETHYL BROMOACETATE	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
1604	ETHYLENEDIAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
1605	ETHYLENE DIBROMIDE	6.1	T1	I	6.1		LQ0	P601 PR3		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1606	FERRIC ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1607	FERRIC ARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1608	FERROUS ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1611	HEXAETHYL TETRAPHOSPHATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1612	HEXAETHYL TETRAPHOSPHATE AND COMPRESSED GAS MIXTURE	2	1T		2.3 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		26
1613	HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with not more than 20 % hydrogen cyanide	6.1	TF1	I	6.1+3	48	LQ0	P601 PR3		MP8 MP17	T14	TP2 TP13	L15DH(+)	TU14 TU15 TE1	0			CW13 CW28 CW31		663
1614	HYDROGEN CYANIDE, STABILIZED, containing less than 3 % water and absorbed in a porous inert material	6.1	TF1	I	6.1+3	603	LQ0	P200		MP2					0			CW13 CW28 CW31		663
1616	LEAD ACETATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1617	LEAD ARSENATES	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1618	LEAD ARSENITES	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1620	LEAD CYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1621	LONDON PURPLE	6.1	T5	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1622	MAGNESIUM ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1623	MERCURIC ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1624	MERCURIC CHLORIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1625	MERCURIC NITRATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1626	MERCURIC POTASSIUM CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1627	MERCUROUS NITRATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1629	MERCURY ACETATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1630	MERCURY AMMONIUM CHLORIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1631	MERCURY BENZOATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1634	MERCURY BROMIDES	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1636	MERCURY CYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1637	MERCURY GLUCONATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1638	MERCURY IODIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1639	MERCURY NUCLEATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1640	MERCURY OLEATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1641	MERCURY OXIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1642	MERCURY OXYCYANIDE, DESENSITIZED	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1643	MERCURY POTASSIUM IODIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1644	MERCURY SALICYLATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1645	MERCURY SULPHATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1646	MERCURY THIOCYANATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1647	METHYL BROMIDE AND ETHYLENE DIBROMIDE MIXTURE, LIQUID	6.1	T1	I	6.1		LQ0	P602		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1648	ACETONITRILE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP2	LGBF		2				CE7	33
1649	MOTOR FUEL ANTI-KNOCK MIXTURE	6.1	T3	I	6.1	162	LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1 TT6	1			CW13 CW28 CW31		66
1650	beta-NAPHTHYLAMINE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1651	NAPHTHYLTHIOUREA	6.1	T2	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1652	NAPHTHYLUREA	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1653	NICKEL CYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1654	NICOTINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	T2	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	T2	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1655	NICOTINE COMPOUND, SOLID, N.O.S. or NICOTINE PREPARATION, SOLID, N.O.S.	6.1	T2	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1656	NICOTINE HYDROCHLORIDE, liquid or NICOTINE HYDROCHLORIDE SOLUTION	6.1	T1	II	6.1	43	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1656	NICOTINE HYDROCHLORIDE, solid	6.1	T2	II	6.1	43	LQ18	P001 IBC02		MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1657	NICOTINE SALICYLATE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1658	NICOTINE SULPHATE, SOLUTION	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1658	NICOTINE SULPHATE, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1659	NICOTINE TARTRATE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1660	NITRIC OXIDE, COMPRESSED	2	1TOC		2.3+5.1 +8		LQ0	P200		MP9					1			CW9 CW10		265
1661	NITROANILINES (o-, m-, p-)	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1662	NITROBENZENE	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1663	NITROPHENOLS (o-, m-, p-)	6.1	T2	III	6.1	279	LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP3	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1664	NITROTOLUENES, LIQUID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1664	NITROTOLUENES, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1665	NITROXYLENES, LIQUID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1665	NITROXYLENES, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1669	PENTACHLOROETHANE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1670	PERCHLOROMETHYL MERCAPTAN	6.1	T1	I	6.1		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1671	PHENOL, SOLID	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10	T6	TP2	SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1672	PHENYLCARBYLAMINE CHLORIDE	6.1	T1	I	6.1		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1673	PHENYLENEDIAMINES (o-, m-, p-)	6.1	T2	III	6.1	279	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1674	PHENYLMERCURIC ACETATE	6.1	T3	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1677	POTASSIUM ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1678	POTASSIUM ARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1679	POTASSIUM CUPROCYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1680	POTASSIUM CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18	T14	TP2 TP13	S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1683	SILVER ARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1684	SILVER CYANIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1685	SODIUM ARSENATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	T4	II	6.1	43	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	T4	III	6.1	43	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1687	SODIUM AZIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10					2			CW13 CW28 CW31	CE9	60
1688	SODIUM CACODYLATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1689	SODIUM CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18	T14	TP2 TP13	S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1690	SODIUM FLUORIDE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1691	STRONTIUM ARSENITE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1692	STRYCHNINE or STRYCHNINE SALTS	6.1	T2	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	T1	I	6.1	274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	T1	II	6.1	274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1693	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	T2	I	6.1	274	LQ0	P002		MP8 MP17			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1693	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	T2	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1694	BROMOBENZYL CYANIDES, LIQUID	6.1	T1	I	6.1	138	LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1694	BROMOBENZYL CYANIDES, SOLID	6.1	T2	I	6.1	138	LQ0	P002		MP18	T14	TP2 TP13	S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1695	CHLOROACETONE, STABILIZED	6.1	TFC	I	6.1+3+8		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1697	CHLOROACETOPHENONE	6.1	T1	II	6.1		LQ17	P002 IBC08	B2 B4	MP10	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1698	DIPHENYLAMINE CHLOROARSINE	6.1	T3	I	6.1		LQ0	P002		MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1699	DIPHENYLCHLOROARSINE, LIQUID	6.1	T3	I	6.1		LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1699	DIPHENYLCHLOROARSINE, SOLID	6.1	T3	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1700	TEAR GAS CANDLES	6.1	TF3	II	6.1+4.1		LQ18	P600							2			CW13 CW28 CW31		64
1701	XYLYL BROMIDE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1702	TETRACHLOROETHANE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1704	TETRAETHYL DITHIOPYROPHOSPHATE	6.1	T2	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1707	THALLIUM COMPOUND, N.O.S.	6.1	T5	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1708	TOLUIDINES, LIQUID	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1708	TOLUIDINES, SOLID	6.1	T2	II	6.1	279	LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1709	2,4-TOLUYLENEDIAMINE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1710	TRICHLOROETHYLENE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1711	XYLIDINES, LIQUID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1711	XYLIDINES, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1712	ZINC ARSENATE, ZINC ARSENITE or ZINC ARSENATE AND ZINC ARSENITE MIXTURE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1713	ZINC CYANIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
1714	ZINC PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1715	ACETIC ANHYDRIDE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
1716	ACETYL BROMIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1717	ACETYL CHLORIDE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T8	TP2 TP12	L4BH	TE1 TE15	2				CE7	X338
1718	BUTYL ACID PHOSPHATE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1719	CAUSTIC ALKALI LIQUID, N.O.S.	8	C5	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80
1719	CAUSTIC ALKALI LIQUID, N.O.S.	8	C5	III	8	274	LQ19	P001 IBC03 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
1722	ALLYL CHLOROFORMATE	6.1	TFC	I	6.1+3+8		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
1723	ALLYL IODIDE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TE1 TE15	2				CE7	338
1724	ALLYLTRICHLOROSILANE, STABILIZED	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X839
1725	ALUMINIUM BROMIDE, ANHYDROUS	8	C2	II	8	588	LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1726	ALUMINIUM CHLORIDE, ANHYDROUS	8	C2	II	8	588	LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1727	AMMONIUM HYDROGEN-DIFLUORIDE, SOLID	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1728	AMYLTRICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1729	ANISOYL CHLORIDE	8	C3	II	8		LQ23	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1730	ANTIMONY PENTACH-LORIDE, LIQUID	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1731	ANTIMONY PENTACH-LORIDE SOLUTION	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1731	ANTIMONY PENTACH-LORIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1732	ANTIMONY PENTAFLUOR-IDE	8	CT1	II	8+6.1		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2			CW13 CW28	CE6	86
1733	ANTIMONY TRICHLORIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			L4BN SGAN		2				CE10	80
1736	BENZOYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BN		2				CE6	80
1737	BENZYL BROMIDE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1738	BENZYL CHLORIDE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
1739	BENZYL CHLORO-FORMATE	8	C9	I	8		LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TE1	1					88
1740	HYDROGENDIFLUORIDES, N.O.S.	8	C2	II	8	274 517	LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1740	HYDROGENDIFLUORIDES, N.O.S.	8	C2	III	8	274 517	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
1741	BORON TRICHLORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
1742	BORON TRIFLUORIDE ACETIC ACID COMPLEX	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1743	BORON TRIFLUORIDE PROPIONIC ACID COMPLEX	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1744	BROMINE or BROMINE SOLUTION	8	CT1	I	8+6.1		LQ0	P601 PR6		MP2	T22	TP2 TP10 TP12 TP13	L21DH(+)	TU14 TU33 TC5 TE1 TT2 TM3 TM5	1			CW13 CW28		886
1745	BROMINE PENTAFLUOR-IDE	5.1	OTC	I	5.1+6.1 +8		LQ0	P200		MP2	T22	TP2 TP12 TP13	L10DH	TU3 TE16	1			CW24 CW28		568

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1746	BROMINE TRIFLUORIDE	5.1	OTC	I	5.1+6.1 +8		LQ0	P200		MP2	T22	TP2 TP12 TP13	L10DH	TU3 TE16	1			CW24 CW28		568
1747	BUTYLTRICHLOROSILANE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X83
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39 % available chlorine (8,8 % available oxygen)	5.1	O2	II	5.1	589	LQ11	P002 IBC08	B2 B4	MP10			SGAN	TU3	2			CW24	CE10	50
1749	CHLORINE TRIFLUORIDE	2	2TOC		2.3+5.1 +8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10 CW16		265
1750	CHLOROACETIC ACID SOLUTION	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
1751	CHLOROACETIC ACID, SOLID	6.1	TC2	II	6.1+8		LQ18	P002 IBC08	B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	68
1752	CHLOROACETYL CHLORIDE	6.1	TC1	I	6.1+8		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
1753	CHLOROPHENYLTRICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1754	CHLOROSULPHONIC ACID (with or without sulphur trioxide)	8	C1	I	8		LQ20	P001		MP8 MP17	T20	TP2 TP12	L10BH	TE1	1					X88
1755	CHROMIC ACID SOLUTION	8	C1	II	8	518	LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1755	CHROMIC ACID SOLUTION	8	C1	III	8	518	LQ19	P001 IBC02 LP01 R001		MP15	T4	TP1 TP12	L4BN		3				CE8	80
1756	CHROMIC FLUORIDE, SOLID	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1757	CHROMIC FLUORIDE SOLUTION	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1757	CHROMIC FLUORIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1758	CHROMIUM OXYCHLORIDE	8	C1	I	8		LQ20	P001		MP8 MP17	T10	TP2 TP12	L10BH	TE1	1					X88
1759	CORROSIVE SOLID, N.O.S.	8	C10	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
1759	CORROSIVE SOLID, N.O.S.	8	C10	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1759	CORROSIVE SOLID, N.O.S.	8	C10	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80
1760	CORROSIVE LIQUID, N.O.S.	8	C9	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
1760	CORROSIVE LIQUID, N.O.S.	8	C9	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80
1760	CORROSIVE LIQUID, N.O.S.	8	C9	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
1761	CUPRIETHYLENEDIAMINE SOLUTION	8	CT1	II	8+6.1		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2			CW13 CW28	CE6	86
1761	CUPRIETHYLENEDIAMINE SOLUTION	8	CT1	III	8+6.1		LQ19	P001 IBC03 R001		MP15	T7	TP1 TP28	L4BN		3			CW13 CW28	CE8	86
1762	CYCLOHEXENYLTRICHLO-ROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1763	CYCLOHEXYLTRICHLORO-SILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1764	DICHLOROACETIC ACID	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1765	DICHLOROACETYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1766	DICHLOROPHENYLTRICH-LOROSILANE	8	C3	II	8		LQ0	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1767	DIETHYLDICHLOROSIL-ANE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X83
1768	DIFLUOROPHOSPHORIC ACID, ANHYDROUS	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1769	DIPHENYLDICHLOROSIL-ANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1770	DIPHENYLMETHYL BRO-MIDE	8	C10	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
1771	DODECYLTRICHLOROSIL-ANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1773	FERRIC CHLORIDE, ANHYDROUS	8	C2	III	8	590	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
1774	FIRE EXTINGUISHER CHARGES, corrosive liquid	8	C11	II	8		LQ22	P001	PP4						2				CE6	80
1775	FLUOROBORIC ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1776	FLUOROPHOSPHORIC ACID, ANHYDROUS	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1777	FLUOROSULPHONIC ACID	8	C1	I	8		LQ20	P001		MP8 MP17	T10	TP2 TP12	L10BH	TE1	1					88
1778	FLUOROSILICIC ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1779	FORMIC ACID	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1780	FUMARYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1781	HEXADECYLTRICHLORO-SILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1782	HEXAFLUORO-PHOSPHORIC ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	C7	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1784	HEXYLTRICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1786	HYDROFLUORIC ACID AND SULPHURIC ACID MIXTURE	8	CT1	I	8+6.1		LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10DH	TU14 TE1 TT4	1			CW13 CW28		886
1787	HYDRIODIC ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1787	HYDRIODIC ACID	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1788	HYDROBROMIC ACID	8	C1	II	8	519	LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1788	HYDROBROMIC ACID	8	C1	III	8	519	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1789	HYDROCHLORIC ACID	8	C1	II	8	520	LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1789	HYDROCHLORIC ACID	8	C1	III	8	520	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1 TP12	L4BN		3				CE8	80
1790	HYDROFLUORIC ACID, with more than 85 % hydrofluoric acid	8	CT1	I	8+6.1	640	LQ0	P802		MP2	T10	TP2 TP12 TP13	L21DH (+)	TU14 TU34 TC1 TE17 TT4 TM3 TM5	1			CW13 CW28		886
1790	HYDROFLUORIC ACID, with more than 60 % but not more than 85 % hydrofluoric acid	8	CT1	I	8+6.1	640	LQ20	P001	RR1	MP8 MP17	T10	TP2 TP12 TP13	L10DH	TU14 TT4 TE1	1			CW13 CW28		886

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1790	HYDROFLUORIC ACID, with not more than 60 % hydrofluoric acid	8	CT1	II	8+6.1		LQ22	P001 IBC02	RR1	MP15	T8	TP2 TP12	L4DH	TU14 TE17 TT4	2			CW13 CW28	CE6	86
1791	HYPOCHLORITE SOLUTION	8	C9	II	8	521	LQ22	P001 IBC02	PP10 B5	MP15	T7	TP2 TP24	L4BV(+)	TE11	2				CE6	80
1791	HYPOCHLORITE SOLUTION	8	C9	III	8	521	LQ19	P001 IBC02 LP01 R001	B5	MP15	T4	TP2 TP24	L4BV(+)	TE11	3				CE8	80
1792	IODINE MONOCHLORIDE	8	C1	II	8		LQ22	P002 IBC08	B2 B4	MP10	T7	TP2	L4BN		2				CE10	80
1793	ISOPROPYL ACID PHOSPHATE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1794	LEAD SULPHATE with more than 3 % free acid	8	C2	II	8	591	LQ23	P002 IBC08	B2 B4	MP10			SGAN		2		VW9		CE10	80
1796	NITRATING ACID MIXTURE with more than 50 % nitric acid	8	CO1	I	8+5.1		LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TC6 TE1 TT1	1			CW24		885
1796	NITRATING ACID MIXTURE with not more than 50 % nitric acid	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BN		2			CW24	CE6	80
1798	NITROHYDROCHLORIC ACID	8	COT	PROHIBITED																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1799	NONYLTRICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1800	OCTADECYLTRICHLORO-SILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1801	OCTYLTRICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
1802	PERCHLORIC ACID with not more than 50 % acid, by mass	8	CO1	II	8+5.1	522	LQ22	P001 IBC02		MP3	T7	TP2	L4BN		2			CW24	CE6	85
1803	PHENOLSULPHONIC ACID, LIQUID	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1804	PHENYLTRICHLOROSIL-ANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1805	PHOSPHORIC ACID, LIQUID	8	C2	III	8		LQ24	P002 IBC08 LP01 R001	B3	MP10					3		VW9		CE11	80
1805	PHOSPHORIC ACID, SOLID	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1806	PHOSPHORUS PENTACH-LORIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1807	PHOSPHORUS PENTOXIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1808	PHOSPHORUS TRIBRO-MIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1809	PHOSPHORUS TRICHLORIDE	6.1	TC3	I	6.1+8		LQ0	P001		MP18	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
1810	PHOSPHORUS OXYCHLORIDE	8	C1	II	8		LQ22	P001		MP15	T7	TP2	L4BN		2				CE6	X80
1811	POTASSIUM HYDROGEN-DIFLUORIDE	8	CT2	II	8+6.1		LQ23	P002 IBC08	B2 B4	MP10	T7	TP2	SGAN		2			CW13 CW28	CE10	86
1812	POTASSIUM FLUORIDE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1813	POTASSIUM HYDROXIDE, SOLID	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1814	POTASSIUM HYDROXIDE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1814	POTASSIUM HYDROXIDE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1815	PROPIONYL CHLORIDE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1816	PROPYLTRICHLOROSIL-ANE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X83
1817	PYROSULPHURYL CHLORIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	X80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1818	SILICON TETRACHLORIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP7	L4BN		2				CE6	X80
1819	SODIUM ALUMINATE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1819	SODIUM ALUMINATE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1823	SODIUM HYDROXIDE, SOLID	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1824	SODIUM HYDROXIDE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1824	SODIUM HYDROXIDE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1825	SODIUM MONOXIDE	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
1826	NITRATING ACID MIXTURE, SPENT, with more than 50 % nitric acid	8	CO1	I	8+5.1	113	LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TE1	1			CW24		885
1826	NITRATING ACID MIXTURE, SPENT, with not more than 50 % nitric acid	8	C1	II	8	113	LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2			CW24	CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1827	STANNIC CHLORIDE, ANHYDROUS	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1828	SULPHUR CHLORIDES	8	C1	I	8		LQ20	P602		MP8 MP17	T20	TP2 TP12	L10BH	TE1	1					X88
1829	SULPHUR TRIOXIDE, STABILIZED	8	C1	I	8	623	LQ20	P001		MP8 MP17	T20	TP4 TP12 TP13 TP26	L10BH	TU32 TE1 TE13 TT5 TM3	1					X88
1830	SULPHURIC ACID with more than 51 % acid	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1831	SULPHURIC ACID, FUMING	8	CT1	I	8+6.1		LQ20	P602		MP8 MP17	T20	TP2 TP12 TP13	L10BH	TE1	1			CW13 CW28		X886
1832	SULPHURIC ACID, SPENT	8	C1	II	8	113	LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1833	SULPHUROUS ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1834	SULPHURYL CHLORIDE	8	C1	I	8		LQ20	P602		MP8 MP17	T20	TP2 TP12	L10BH	TE1	1					X88
1835	TETRAMETHYLAMMONIUM HYDROXIDE	8	C7	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1836	THIONYL CHLORIDE	8	C1	I	8		LQ20	P802		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TE1	1					X88

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1837	THIOPHOSPHORYL CHLORIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	X80
1838	TITANIUM TETRACHLORIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T10	TP2 TP13	L4BN		2				CE6	X80
1839	TRICHLOROACETIC ACID	8	C4	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
1840	ZINC CHLORIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1841	ACETALDEHYDE AMMONIA	9	M11	III	9		LQ27	P002 IBC08 LP01 R001	B6	MP10			SGAV		3	W1	VW9	CW31	CE11	90
1843	AMMONIUM DINITRO-o-CRESOLATE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1845	Carbon dioxide, solid (Dry ice)	9	M11	EXEMPT																
1846	CARBON TETRACHLORIDE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1847	POTASSIUM SULPHIDE, HYDRATED with not less than 30 % water of crystallization	8	C6	II	8	523	LQ23	P002 IBC08	B2 B4	MP10			L4BN SGAN		2				CE10	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1848	PROPIONIC ACID	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1849	SODIUM SULPHIDE, HYDRATED with not less than 30 % water	8	C6	II	8	523	LQ23	P002 IBC08	B2 B4	MP10	T7	TP2	L4BN SGAN		2				CE10	80
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	T1	II	6.1	221 274 601	LQ17	P001	PP6	MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	T1	III	6.1	221 274 601	LQ19	P001 LP01 R001	PP6	MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1854	BARIUM ALLOYS, PYROPHORIC	4.2	S4	I	4.2		LQ0	P404		MP13					0	W1				43
1855	CALCIUM, PYROPHORIC or CALCIUM ALLOYS, PYROPHORIC	4.2	S4	I	4.2		LQ0	P404		MP13					0	W1				43
1858	HEXAFLUOROPROPYLENE (REFRIGERANT GAS R 1216)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1859	SILICON TETRAFLUORIDE, COMPRESSED	2	1TC		2.3+8 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		268
1860	VINYL FLUORIDE, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	239

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1862	ETHYL CROTONATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP2	LGBF		2				CE7	33
1863	FUEL, AVIATION, TURBINE ENGINE (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L4BN		1					33
1863	FUEL, AVIATION, TURBINE ENGINE (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L1,5BN		1					33
1863	FUEL, AVIATION, TURBINE ENGINE (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ4	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1863	FUEL, AVIATION, TURBINE ENGINE (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ4	P001 IBC02 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
1863	FUEL, AVIATION, TURBINE ENGINE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1865	n-PROPYL NITRATE	3	F1	II	3		LQ4	P001 IBC02 R001	B7	MP19					2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1866	RESIN SOLUTION, flammable (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L4BN		1					33
1866	RESIN SOLUTION, flammable (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	640	LQ3	P001		MP7 MP17	T11	TP1 TP8	L1,5BN		1					33
1866	RESIN SOLUTION, flammable (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	640	LQ6	P001	PP1	MP19	T4	TP1 TP8	L1,5BN		2				CE7	33
1866	RESIN SOLUTION, flammable (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	640	LQ6	P001 IBC02 R001	PP1	MP19	T4	TP1 TP8	LGBF		2				CE7	33
1866	RESIN SOLUTION, flammable	3	F1	III	3	640	LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1866	RESIN SOLUTION, flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L4BN		3				CE4	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1866	RESIN SOLUTION, flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001	PP1	MP19	T2	TP1	L1,5BN		3				CE4	33
1866	RESIN SOLUTION, flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001	PP1	MP19	T2	TP1	LGBF		3				CE4	33
1868	DECABORANE	4.1	FT2	II	4.1+6.1		LQ0	P002 IBC06	B2	MP10			SGAN		2	W1		CW28	CE10	46
1869	MAGNESIUM or MAGNESIUM ALLOYS with more than 50 % magnesium in pellets, turnings or ribbons	4.1	F3	III	4.1	59	LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
1870	POTASSIUM BOROHYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
1871	TITANIUM HYDRIDE	4.1	F3	II	4.1		LQ8	P410 IBC04	PP40	MP11			SGAN		2	W1			CE10	40
1872	LEAD DIOXIDE	5.1	OT2	III	5.1+6.1		LQ12	P002 IBC08 LP02 R001	B3	MP2			SGAN	TU3	3			CW24 CW28	CE11	56

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1873	PERCHLORIC ACID with more than 50 % but not more than 72 % acid, by mass	5.1	OC1	I	5.1+8	60	LQ0	P502	PP28	MP3	T10	TP1 TP12	L4DN(+)	TU3 TU28 TE16	1			CW24		558
1884	BARIUM OXIDE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
1885	BENZIDINE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1886	BENZYLIDENE CHLORIDE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
1887	BROMOCHLOROMETHANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1888	CHLOROFORM	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1889	CYANOGEN BROMIDE	6.1	TC2	I	6.1+8		LQ0	P001		MP8 MP17			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
1891	ETHYL BROMIDE	6.1	T1	II	6.1		LQ17	P001 IBC02	B8	MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1892	ETHYLDICHLOROARSINE	6.1	T3	I	6.1		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1894	PHENYLMERCURIC HYDROXIDE	6.1	T3	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1895	PHENYLMERCURIC NITRATE	6.1	T3	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
1897	TETRACHLOROETHYLENE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1898	ACETYL IODIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	80
1902	DIISOOCTYL ACID PHOSPHATE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	C9	I	8	274	LQ20	P001		MP8 MP17			L10BH	TE1	1					88
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	C9	II	8	274	LQ22	P001 IBC02		MP15			L4BN		2				CE6	80
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	C9	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15			L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1905	SELENIC ACID	8	C2	I	8		LQ21	P002 IBC07	B1	MP18			S10AN		1					88
1906	SLUDGE ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
1907	SODA LIME with more than 4 % sodium hydroxide	8	C6	III	8	62	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
1908	CHLORITE SOLUTION	8	C9	II	8	521	LQ22	P001 IBC02		MP15	T7	TP2 TP24	L4BV(+)	TE11	2				CE6	80
1908	CHLORITE SOLUTION	8	C9	III	8	521	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2 TP24	L4BV(+)	TE11	3				CE8	80
1910	Calcium oxide	8	C6	EXEMPT																
1911	DIBORANE, COMPRESSED	2	1TF		2.3+2.1		LQ0	P200		MP9					1			CW9 CW10		263
1912	METHYL CHLORIDE AND METHYLENE CHLORIDE MIXTURE	2	2F		2.1 (+13)	228	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1913	NEON, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1914	BUTYL PROPIONATES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1915	CYCLOHEXANONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1916	2,2-DICHLORODIETHYL ETHER	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
1917	ETHYL ACRYLATE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP13	LGBF		2				CE7	339
1918	ISOPROPYLBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1919	METHYL ACRYLATE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP13	LGBF		2				CE7	339
1920	NONANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
1921	PROPYLENEIMINE, STABILIZED	3	FT1	I	3+6.1		LQ0	P001		MP2	T14	TP2 TP13	L15CH	TU14 TU15 TE1	1			CW13 CW28		336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1922	PYRROLIDINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
1923	CALCIUM DITHIONITE (CALCIUM HYDROSULPHITE)	4.2	S4	II	4.2		LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
1928	METHYL MAGNESIUM BROMIDE IN ETHYL ETHER	4.3	WF1	I	4.3+3		LQ0	P402 PR1		MP2			L10DH	TU4 TU14 TU22 TE1 TM2	0	W1		CW23		X323
1929	POTASSIUM DITHIONITE (POTASSIUM HYDROSULPHITE)	4.2	S4	II	4.2		LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
1931	ZINC DITHIONITE (ZINC HYDROSULPHITE)	9	M11	III	9		LQ27	P002 IBC08 LP02 R001		MP10			SGAV		3	W1	VW9	CW31	CE11	90
1932	ZIRCONIUM SCRAP	4.2	S4	III	4.2	524 592	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
1935	CYANIDE SOLUTION, N.O.S.	6.1	T4	I	6.1	274 525	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
1935	CYANIDE SOLUTION, N.O.S.	6.1	T4	II	6.1	274 525	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1935	CYANIDE SOLUTION, N.O.S.	6.1	T4	III	6.1	274 525	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP13 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
1938	BROMOACETIC ACID	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1939	PHOSPHORUS OXYBROMIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10	T7	TP2	SGAN		2				CE10	80
1940	THIOGLYCOLIC ACID	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
1941	DIBROMODIFLUOROMETHANE	9	M11	III	9		LQ28	P001 LP01 R001		MP15	T11	TP2	L4BN		3	W1		CW31	CE8	90
1942	AMMONIUM NITRATE with not more than 0,2 % combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	5.1	O2	III	5.1	611	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
1944	MATCHES, SAFETY (book, card or strike on box)	4.1	F1	III	4.1	293	LQ9	P407 R001		MP11					4	W1			CE11	40
1945	MATCHES, WAX 'VESTA'	4.1	F1	III	4.1	293	LQ9	P407 R001		MP11					4	W1			CE11	40
1950	AEROSOLS	2	5A		2.2	190 625	LQ2	P204		MP9					3			CW9 CW12	CE2	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1950	AEROSOLS	2	5F		2.1	190 625	LQ2	P204		MP9					2			CW9 CW12	CE2	23
1950	AEROSOLS	2	5O		2.2+5.1	190 625	LQ2	P204		MP9					3			CW9 CW12	CE2	25
1950	AEROSOLS	2	5T		2.3	190 625	LQ1	P204		MP9					1			CW9 CW12		26
1950	AEROSOLS	2	5TC		2.3+8	190 625	LQ1	P204		MP9					1			CW9 CW12		268
1950	AEROSOLS	2	5TF		2.3+2.1	190 625	LQ1	P204		MP9					1			CW9 CW12		263
1950	AEROSOLS	2	5TFC		2.3+2.1 +8	190 625	LQ1	P204		MP9					1			CW9 CW12		263
1950	AEROSOLS	2	5TO		2.3+5.1	190 625	LQ1	P204		MP9					1			CW9 CW12		265
1950	AEROSOLS	2	5TOC		2.3+5.1 +8	190 625	LQ1	P204		MP9					1			CW9 CW12		265
1951	ARGON, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
1952	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with not more than 9 % ethylene oxide	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1953	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	2	1TF		2.3+2.1 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		263
1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2	1F		2.1 (+13)	274	LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23
1955	COMPRESSED GAS, TOXIC, N.O.S.	2	1T		2.3 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		26
1956	COMPRESSED GAS, N.O.S.	2	1A		2.2 (+13)	274 567	LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1957	DEUTERIUM, COMPRESSED	2	1F		2.1 (+13)		LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23
1958	1,2-DICHLORO-1,1,2,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 114)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1959	1,1-DIFLUOROETHYLENE (REFRIGERANT GAS R 1132a)	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	239
1961	ETHANE, REFRIGERATED LIQUID	2	3F		2.1 (+13)		LQ0	P203		MP9	T75		RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
1962	ETHYLENE, COMPRESSED	2	1F		2.1 (+13)		LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1963	HELIUM, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
1964	HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S.	2	1F		2.1 (+13)	274	LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23
1965	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. such as mixtures A, A01, A02, A0, A1, B1, B2, B or C	2	2F		2.1 (+13)	274 583	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1966	HYDROGEN, REFRIGERATED LIQUID	2	3F		2.1 (+13)		LQ0	P203		MP9	T75	TP23	RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
1967	INSECTICIDE GAS, TOXIC, N.O.S.	2	2T		2.3 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		26
1968	INSECTICIDE GAS, N.O.S.	2	2A		2.2 (+13)	274	LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1969	ISOBUTANE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1970	KRYPTON, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1971	METHANE, COMPRESSED or NATURAL GAS, COMPRESSED with high methane content	2	1F		2.1 (+13)		LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23
1972	METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID with high methane content	2	3F		2.1 (+13)		LQ0	P203		MP9	T75		RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
1973	CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUOROETHANE MIXTURE with fixed boiling point, with approximately 49 % chlorodifluoromethane (REFRIGERANT GAS R 502)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1974	CHLORODIFLUOROBROMOMETHANE (REFRIGERANT GAS R 12B1)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1975	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURE (NITRIC OXIDE AND NITROGEN DIOXIDE MIXTURE)	2	2TOC		2.3+5.1 +8		LQ0	P200		MP9					1			CW9 CW10		265
1976	OCTAFLUOROCYCLOBUTANE (REFRIGERANT GAS RC 318)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1977	NITROGEN, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
1978	PROPANE	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
1979	RARE GASES MIXTURE, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1980	RARE GASES AND OXYGEN MIXTURE, COMPRESSED	2	1A		2.2 (+13)	567	LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1981	RARE GASES AND NITROGEN MIXTURE, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1982	TETRAFLUOROMETHANE, COMPRESSED (REFRIGERANT GAS R 14, COMPRESSED)	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
1983	1-CHLORO-2,2,2-TRIFLUOROETHANE (REFRIGERANT GAS R 133a)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
1984	TRIFLUOROMETHANE (REFRIGERANT GAS R 23)	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	I	3+6.1	274	LQ0	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	274	LQ0	P001 IBC02		MP19	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1	274	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
1987	ALCOHOLS, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
1987	ALCOHOLS, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
1987	ALCOHOLS, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	FT1	I	3+6.1	274	LQ0	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	274	LQ0	P001 IBC02		MP19	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1	274	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1989	ALDEHYDES, N.O.S. (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP9 TP27	L1,5BN		1					33
1989	ALDEHYDES, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP9 TP27	L4BN		1					33
1989	ALDEHYDES, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
1989	ALDEHYDES, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
1989	ALDEHYDES, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
1990	BENZALDEHYDE	9	M11	III	9		LQ28	P001 IBC03 LP01 R001		MP15	T2	TP1	LGBV		3	W1		CW31	CE8	90
1991	CHLOROPRENE, STABILIZED	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP6 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	I	3+6.1	274	LQ0	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU15 TE1 TE15	1			CW13 CW28		336
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	II	3+6.1	274	LQ0	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	III	3+6.1	274	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
1993	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP9	L4BN		1					33
1993	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP9	L1,5BN		1					33
1993	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
1993	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
1993	FLAMMABLE LIQUID, N.O.S.	3	F1	III	3	274 640	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1993	FLAMMABLE LIQUID, N.O.S. (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 175 kPa)	3	F1	III	3	274 640	LQ7	P001 R001 LP01		MP19	T4	TP1 TP29	L4BN		3				CE4	33
1993	FLAMMABLE LIQUID, N.O.S. (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	274 640	LQ7	P001 R001 LP01		MP19	T4	TP1 TP29	L1,5BN		3				CE4	33
1993	FLAMMABLE LIQUID, N.O.S. (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	274 640	LQ7	P001 IBC02 R001 LP01		MP19	T4	TP1 TP29	LGBF		3				CE4	33
1994	IRON PENTACARBONYL	6.1	TF1	I	6.1+3		LQ0	P601 PR3		MP2			L15CH	TU14 TU15 TU31 TE1 TM3	1			CW13 CW28 CW31		663
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ6	P001		MP19	T3	TP3 TP29	L1,5BN		2				CE7	33
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ6	P001 IBC02 R001		MP19	T3	TP3 TP29	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs	3	F1	III	3	274 640	LQ7	P001 IBC03 LP01 R001		MP19	T1	TP3	LGBF		3				CE4	30
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50°C more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T1	TP3	L4BN		3				CE4	33
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	III	3	640	LQ7	P001 LP01 R001		MP19	T1	TP3	L1−5BN		3				CE4	33
1999	TARS, LIQUID, including road asphalt and oils, bitumen and cut backs (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)	3	F1	III	3	640	LQ7	P001 IBC02 LP01 R001		MP19	T1	TP3	LGBF		3				CE4	33
2000	CELLULOID in block, rods, rolls, sheets, tubes, etc., except scrap	4.1	F1	III	4.1	502	LQ9	P002 LP02 R001	PP7	MP11					3	W1			CE11	40
2001	COBALT NAPHTHENATES, POWDER	4.1	F3	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
2002	CELLULOID, SCRAP	4.2	S2	III	4.2	526 592	LQ0	P002 IBC08 LP02 R001	PP8 B3	MP14					3	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2003	METAL ALKYLS, WATER-REACTIVE, N.O.S. or METAL ARYLS, WATER-REACTIVE, N.O.S.	4.2	SW	I	4.2+4.3	274 527	LQ0	P400 PR1		MP2	T21	TP2 TP7 TP9	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
2004	MAGNESIUM DIAMIDE	4.2	S4	II	4.2		LQ0	P410 IBC06		MP14			SGAN		2	W1			CE10	40
2005	MAGNESIUM DIPHENYL	4.2	SW	I	4.2+4.3		LQ0	P404		MP2			L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
2006	PLASTICS, NITRO-CELLULOSE- BASED, SELF-HEATING, N.O.S.	4.2	S2	III	4.2	274 528	LQ0	P002 R001		MP14					3	W1			CE11	40
2008	ZIRCONIUM POWDER, DRY	4.2	S4	I	4.2	524 540	LQ0	P404		MP13					0	W1				43
2008	ZIRCONIUM POWDER, DRY	4.2	S4	II	4.2	524 540	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
2008	ZIRCONIUM POWDER, DRY	4.2	S4	III	4.2	540	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
2009	ZIRCONIUM, DRY, finished sheets, strip or coiled wire	4.2	S4	III	4.2	524 592	LQ0	P002 LP02 R001		MP14					3	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2010	MAGNESIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
2011	MAGNESIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
2012	POTASSIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
2013	STRONTIUM PHOSPHIDE	4.3	WT2	I	4.3+6.1		LQ0	P403		MP2					1	W1		CW23 CW28		X462
2014	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20 % but not more than 60 % hydrogen peroxide (stabilized as necessary)	5.1	OC1	II	5.1+8		LQ10	P504 IBC02	PP10 PP29 B5	MP15	T7	TP2 TP6 TP24	L4BV(+)	TU3 TC2 TE8 TE11 TT1	2			CW24	CE6	58
2015	HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED with more than 60 % hydrogen peroxide and not more than 70 % hydrogen peroxide	5.1	OC1	I	5.1+8		LQ0	P501		MP2	T10	TP2 TP6 TP24	L4BV(+)	TU3 TU28 TC2 TE7 TE8 TE9 TE16 TT1	1	W5		CW24		559
2015	HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED with more than 70 % hydrogen peroxide	5.1	OC1	I	5.1+8		LQ0	P501		MP2	T10	TP2 TP6 TP24	L4DV(+)	TU3 TU28 TC2 TE8 TE9 TE16 TT1	1	W5		CW24		559

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2016	AMMUNITION, TOXIC, NON-EXPLOSIVE without burster or expelling charge, non-fuzed	6.1	T2	II	6.1		LQ0	P600		MP10					2			CW13 CW28 CW31	CE9	60
2017	AMMUNITION, TEAR-PRODUCING, NON-EXPLOSIVE without burster or expelling charge, non-fuzed	6.1	TC2	II	6.1+8		LQ0	P600							2			CW13 CW28 CW31		68
2018	CHLOROANILINES, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2019	CHLOROANILINES, LIQUID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2020	CHLOROPHENOLS, SOLID	6.1	T2	III	6.1	205	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2021	CHLOROPHENOLS, LIQUID	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2022	CRESYLIC ACID	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2023	EPICHLOROHYDRIN	6.1	TF1	II	6.1+3	279	LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	T4	I	6.1	43 274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	T4	II	6.1	43 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	T4	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	T5	I	6.1	43 274 529 585	LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	T5	II	6.1	43 274 529 585	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	T5	III	6.1	43 274 529 585	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	T3	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	T3	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	T3	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2027	SODIUM ARSENITE, SOLID	6.1	T5	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2028	BOMBS, SMOKE, NON-EXPLOSIVE with corrosive liquid, without initiating device	8	C11	II	8		LQ0	P803							2					80
2029	HYDRAZINE, ANHYDROUS	8	CFT	I	8+3+6.1		LQ20	P001		MP8 MP17					1			CW13 CW28		886
2030	HYDRAZINE HYDRATE or HYDRAZINE, AQUEOUS SOLUTION with not less than 37 % but not more than 64 % hydrazine, by mass	8	CT1	II	8+6.1	530	LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2			CW13 CW28	CE6	86
2031	NITRIC ACID, other than red fuming, with more than 70 % nitric acid	8	CO1	I	8+5.1		LQ20	P001	RR1	MP8 MP17	T10	TP2 TP12 TP13	L10BH	TC6 TE1 TT1	1			CW24		885
2031	NITRIC ACID, other than red fuming, with not more than 70 % nitric acid	8	CO1	II	8		LQ22	P001 IBC02	RR1	MP15	T8	TP2 TP12	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2032	NITRIC ACID, RED FUMING	8	COT	I	8+5.1 +6.1		LQ20	P602		MP8 MP17	T20	TP2 TP12 TP13	L10BH	TC6 TE1 TT1	1			CW13 CW24 CW28		856
2033	POTASSIUM MONOXIDE	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2034	HYDROGEN AND METHANE MIXTURE, COMPRESSED	2	1F		2.1 (+13)		LQ0	P200		MP9			CxBN(M)		2			CW9 CW10	CE3	23
2035	1,1,1-TRIFLUOROETHANE (REFRIGERANT GAS R 143a)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
2036	XENON, COMPRESSED	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5A		2.2	191	LQ2	P204		MP9					3			CW9 CW12	CE2	20
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5F		2.1	191	LQ2	P204		MP9					2			CW9 CW12	CE2	23
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5O		2.2+5.1	191	LQ2	P204		MP9					3			CW9 CW12	CE2	25

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5T		2.3		LQ1	P204		MP9					1			CW9 CW12		26
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5TC		2.3+8		LQ1	P204		MP9					1			CW9 CW12		268
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5TF		2.3+2.1		LQ1	P204		MP9					1			CW9 CW12		263
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5TFC		2.3+2.1 +8		LQ1	P204		MP9					1			CW9 CW12		263
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5TO		2.3+5.1		LQ1	P204		MP9					1			CW9 CW12		265
2037	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable	2	5TOC		2.3+5.1 +8		LQ1	P204		MP9					1			CW9 CW12		265
2038	DINITROTOLUENES, LIQUID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2038	DINITROTOLUENES, SOLID	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2044	2,2-DIMETHYLPROPANE	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
2045	ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE)	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2046	CYMENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2047	DICHLOROPROPENES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2047	DICHLOROPROPENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2048	DICYCLOPENTADIENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2049	DIETHYLBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2050	DIISOBUTYLENE, ISOMERIC COMPOUNDS	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2051	2-DIMETHYLAMINOETHANOL	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2052	DIPENTENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2053	METHYL ISOBUTYL CARBINOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2054	MORPHOLINE	8	CF1	I	8+3		LQ20	P001		MP8 MP17	T10	TP2	L10BH	TE1	1					883
2055	STYRENE MONOMER, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2056	TETRAHYDROFURAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2057	TRIPROPYLENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2057	TRIPROPYLENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2058	VALERALDEHYDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12,6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose (vapour pressure at 50 °C more than 175 kPa)	3	D	I	3	198 531 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L4BN		1					33
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12,6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	D	I	3	198 531 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP27	L1,5BN		1					33
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12,6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	D	II	3	198 531 640	LQ4	P001		MP19	T4	TP1 TP8	L1,5BN		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12,6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose (vapour pressure at 50 °C not more than 110 kPa)	3	D	II	3	198 531 640	LQ4	P001 R001		MP19	T4	TP1 TP8	LGBF		2				CE7	33
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12,6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose	3	D	III	3	198 531	LQ7	P001 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2067	AMMONIUM NITRATE FERTILIZERS, Type A1	5.1	O2	III	5.1	186 624 628	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2068	AMMONIUM NITRATE FERTILIZERS, Type A2	5.1	O2	III	5.1	186 624 629	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2069	AMMONIUM NITRATE FERTILIZERS, Type A3	5.1	O2	III	5.1	186 624 630	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2070	AMMONIUM NITRATE FERTILIZERS, Type A4	5.1	O2	III	5.1	186 624 631	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2071	Ammonium nitrate fertilizers	9	M11	EXEMPT																
2072	AMMONIUM NITRATE FERTILIZER, N.O.S.	5.1	O2	PROHIBITED																
2073	AMMONIA SOLUTION, relative density less than 0,880 at 15 °C in water, with more than 35 % but not more than 50 % ammonia	2	4A		2.2 (+13)	532	LQ1	P200		MP9			PxBN(M)		3			CW9 CW10	CE2	20
2074	ACRYLAMIDE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2075	CHLORAL, ANHYDROUS, STABILIZED	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	69
2076	CRESOLS, LIQUID	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
2076	CRESOLS, SOLID	6.1	TC2	II	6.1+8		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	68
2077	alpha-NAPHTHYLAMINE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T3	TP1	L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2078	TOLUENE DIISOCYANATE	6.1	T1	II	6.1	279	LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2079	DIETHYLENETRIAMINE	8	C7	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2186	HYDROGEN CHLORIDE, REFRIGERATED LIQUID	2	3TC	PROHIBITED																
2187	CARBON DIOXIDE, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
2188	ARSINE	2	2TF		2.3+2.1		LQ0	P200		MP9					1			CW9 CW10		263
2189	DICHLOROSILANE	2	2TFC		2.3+2.1 +8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		263
2190	OXYGEN DIFLUORIDE, COMPRESSED	2	1TOC		2.3+5.1 +8		LQ0	P200		MP9					1			CW9 CW10		265
2191	SULPHURYL FLUORIDE	2	2T		2.3 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		26
2192	GERMANE	2	2TF		2.3+2.1	632	LQ0	P200		MP9					1			CW9 CW10		263

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2193	HEXAFLUOROETHANE, COMPRESSED (REFRIGERANT GAS R 116, COMPRESSED)	2	1A		2.2 (+13)		LQ1	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	20
2194	SELENIUM HEXAFLUORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
2195	TELLURIUM HEXAFLUORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
2196	TUNGSTEN HEXAFLUORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
2197	HYDROGEN IODIDE, ANHYDROUS	2	2TC		2.3+8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		268
2198	PHOSPHORUS PENTA-FLUORIDE, COMPRESSED	2	1TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
2199	PHOSPHINE	2	2TF		2.3+2.1	632	LQ0	P200		MP9					1			CW9 CW10		263
2200	PROPADIENE, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	239
2201	NITROUS OXIDE, REFRIGERATED LIQUID	2	3O		2.2+5.1 (+13)		LQ0	P203		MP9	T75	TP22	RxBN	TU7 TU19 TM6	3	W5		CW9 CW11 CW30	CE2	225
2202	HYDROGEN SELENIDE, ANHYDROUS	2	2TF		2.3+2.1		LQ0	P200		MP9					1			CW9 CW10		263

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2203	SILANE, COMPRESSED	2	1F		2.1 (+13)	632	LQ0	P200		MP9			CxBN(M)		2			CW9 CW10		23
2204	CARBONYL SULPHIDE	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		263
2205	ADIPONITRILE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T3	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2206	ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTION, TOXIC, N.O.S.	6.1	T1	II	6.1	274 551	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2206	ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTION, TOXIC, N.O.S.	6.1	T1	III	6.1	274 551	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP13 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2208	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10 % but not more than 39 % available chlorine	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAN	TU3	3			CW24	CE11	50
2209	FORMALDEHYDE SOLUTION with not less than 25 % formaldehyde	8	C9	III	8	533	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2210	MANEB or MANEB PREPARATION with not less than 60 % maneb	4.2	SW	III	4.2+4.3	273	LQ0	P002 IBC06 R001		MP14			SGAN		3	W1			CE11	40
2211	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour	9	M3	III	GEEN	207 633	LQ27	P002 IBC08 R001	PP14 B6	MP10			SGAN	TE20	3	W1	VW3	CW31	CE11	90
2212	BLUE ASBESTOS (crocidolite) or BROWN ASBESTOS (amosite, mysorite)	9	M1	II	9	168	LQ25	P002 IBC08	PP37 B2 B4	MP10			SGAH	TU15 TE1	2	W1		CW13 CW28 CW31	CE9	90
2213	PARAFORMALDEHYDE	4.1	F1	III	4.1		LQ9	P002 IBC08 LP02 R001	PP12 B3	MP10			SGAV		3	W1	VW1		CE11	40
2214	PHTHALIC ANHYDRIDE with more than 0,05 % of maleic anhydride	8	C4	III	8	169	LQ24	P002 IBC08 LP02 R001	B3	MP10	T4	TP3	SGAV L4BN		3		VW9		CE11	80
2215	MALEIC ANHYDRIDE, MOLTEN	8	C3	III	8		LQ0				T4	TP3	L4BN		0				CE8	80
2215	MALEIC ANHYDRIDE	8	C4	III	8		LQ24	P002 IBC08 R001	B3	MP10	T4	TP1	SGAV		3		VW9		CE11	80
2216	Fish meal (Fish scrap), stabilized	9	M11	EXEMPT																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2217	SEED CAKE with not more than 1,5 % oil and not more than 11 % moisture	4.2	S2	III	4.2	142	LQ0	P002 IBC08 LP02 R001	PP20 B3 B6	MP14					3	W1	VW4		CE11	40
2218	ACRYLIC ACID, STABILIZED	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	839
2219	ALLYL GLYCIDYL ETHER	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2222	ANISOLE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2224	BENZONITRILE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2225	BENZENESULPHONYL CHLORIDE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2226	BENZOTRICHLORIDE	8	C9	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2227	n-BUTYL METHACRYLATE, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2232	2-CHLOROETHANAL	6.1	T1	I	6.1		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2233	CHLOROANISIDINES	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2234	CHLOROBENZO-TRIFLUORIDES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2235	CHLOROBENZYL CHLORIDES	6.1	T2	III	6.1		LQ9	P001 IBC03 LP01 R001		MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2236	3-CHLORO-4-METHYLPHE-NYL ISOCYANATE	6.1	T2	II	6.1		LQ18	P001 IBC02		MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2237	CHLORONITROANILINES	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2238	CHLOROTOLUENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2239	CHLOROTOLUIDINES, liquid	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2239	CHLOROTOLUIDINES, solid	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2240	CHROMOSULPHURIC ACID	8	C1	I	8		LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TE1	1					88
2241	CYCLOHEPTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2242	CYCLOHEPTENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2243	CYCLOHEXYL ACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2244	CYCLOPENTANOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2245	CYCLOPENTANONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2246	CYCLOPENTENE	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP2	L1,5BN		2				CE7	33
2247	n-DECANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2248	DI-n-BUTYLAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2249	DICHLORODIMETHYL ETHER, SYMMETRICAL	6.1	T1	PROHIBITED																
2250	DICHLOROPHENYL ISO-CYANATES	6.1	T2	II	6.1		LQ17	P002 IBC08	B2 B4	MP10	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2251	BICYCLO[2.2.1]HEPTA-2,5-DIENE, STABILIZED (2,5-NORBORNADIENE, STABILIZED)	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP2	LGBF		2				CE7	339
2252	1,2-DIMETHOXYETHANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2253	N,N-DIMETHYLANILINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2254	MATCHES, FUSEE	4.1	F1	III	4.1	293	LQ9	P407 R001		MP11					4	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2256	CYCLOHEXENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2257	POTASSIUM	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2	T9	TP3 TP7	L10BN(+)	TU1 TE5 TM2 TT3	1	W1		CW23		X423
2258	1,2-PROPYLENEDIAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2259	TRIETHYLENETETRAMINE	8	C7	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2260	TRIPROPYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2261	XYLENOLS, liquid	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2261	XYLENOLS, solid	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2262	DIMETHYLCARBAMOYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2263	DIMETHYLCYCLOHEXANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2264	DIMETHYLCYCLOHEXYLA-MINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2265	N,N-DIMETHYLFORM-AMIDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP2	LGBF		3				CE4	30
2266	DIMETHYL-N-PROPYLA-MINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TE1 TE15	2				CE7	338
2267	DIMETHYL THIOPHOS-PHORYL CHLORIDE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
2269	3,3′-IMINODIPROPYLA-MINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BN		3				CE8	80
2270	ETHYLAMINE, AQUEOUS SOLUTION with not less than 50 % but not more than 70 % ethylamine	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2271	ETHYL AMYL KETONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2272	N-ETHYLANILINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2273	2-ETHYLANILINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2274	N-ETHYL-N-BENZYLANILINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2275	2-ETHYLBUTANOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2276	2-ETHYLHEXYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2277	ETHYL METHACRYLATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
2278	n-HEPTENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2279	HEXACHLOROBUTADIENE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2280	HEXAMETHYLENE-DIAMINE, SOLID	8	C8	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAV L4BN		3		VW9		CE11	80
2281	HEXAMETHYLENE DIISOCYANATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2282	HEXANOLS	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2283	ISOBUTYL METHACRY-LATE, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2284	ISOBUTYRONITRILE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2285	ISOCYANATOBENZO-TRIFLUORIDES	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2286	PENTAMETHYLHEPTANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2287	ISOHEPTENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2288	ISOHEXENE	3	F1	II	3		LQ4	P001 IBC02 R001	B8	MP19	T11	TP1	LGBF		2				CE7	33
2289	ISOPHORONEDIAMINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2290	ISOPHORONE DIISOCYANATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2291	LEAD COMPOUND, SOLUBLE, N.O.S.	6.1	T5	III	6.1	199 274 535	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2293	4-METHOXY-4-METHYLPENTAN-2-ONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2294	N-METHYLANILINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2295	METHYL CHLOROACETATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2296	METHYLCYCLOHEXANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2297	METHYLCYCLOHEXANONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2298	METHYLCYCLOPENTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2299	METHYL DICHLOROACETATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2300	2-METHYL-5-ETHYLPYRIDINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2301	2-METHYLFURAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2302	5-METHYLHEXAN-2-ONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2303	ISOPROPENYLBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2304	NAPHTHALENE, MOLTEN	4.1	F2	III	4.1	536	LQ0				T1	TP3	LGBV	TU27 TE4 TE6	0					44
2305	NITROBENZENESULPHONIC ACID	8	C4	II	8		LQ23	P002 IBC08	B2 B4	MP10			L4BN SGAN		2				CE10	80
2306	NITROBENZOTRIFLUORIDES, liquid	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2306	NITROBENZOTRIFLUORIDES, solid	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2307	3-NITRO-4-CHLOROBENZOTRIFLUORIDE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP10	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2308	NITROSYLSULPHURIC ACID, LIQUID	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	X80
2308	NITROSYLSULPHURIC ACID, SOLID	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10	T8	TP2 TP12	SGAN		2				CE10	X80
2309	OCTADIENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2310	PENTANE-2,4-DIONE	3	FT1	III	3+6.1		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
2311	PHENETIDINES	6.1	T1	III	6.1	279	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2312	PHENOL, MOLTEN	6.1	T1	II	6.1		LQ0				T7	TP3	L4BH	TU15 TE1 TE15	0			CW13 CW28 CW31		60
2313	PICOLINES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1	LGBF		3				CE4	30
2315	POLYCHLORINATED BIPHENYLS	9	M2	II	9	595	LQ29	P906 IBC02		MP15	T4	TP1	L4BH	TU15 TE1	0	W1		CW13 CW28 CW31	CE5	90
2316	SODIUM CUPROCYANIDE, SOLID	6.1	T5	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
2317	SODIUM CUPROCYANIDE SOLUTION	6.1	T4	I	6.1		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2318	SODIUM HYDROSULPHIDE with less than 25 % water of crystallization	4.2	S4	II	4.2	504	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2319	TERPENE HYDROCARBONS, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
2320	TETRAETHYLENEPENTAMINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2321	TRICHLOROBENZENES, LIQUID	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2322	TRICHLOROBUTENE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2323	TRIETHYL PHOSPHITE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2324	TRIISOBUTYLENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1	LGBF		3				CE4	30
2325	1,3,5-TRIMETHYLBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2326	TRIMETHYLCYCLOHEXYLAMINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2327	TRIMETHYLHEXAMETHYLENEDIAMINES	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2328	TRIMETHYLHEXAMETHYLENE DIISOCYANATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2329	TRIMETHYL PHOSPHITE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2330	UNDECANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2331	ZINC CHLORIDE, ANHYDROUS	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2332	ACETALDEHYDE OXIME	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2333	ALLYL ACETATE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2334	ALLYLAMINE	6.1	TF1	I	6.1+3		LQ0	P602		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2335	ALLYL ETHYL ETHER	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2336	ALLYL FORMATE	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2337	PHENYL MERCAPTAN	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2338	BENZOTRIFLUORIDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2339	2-BROMOBUTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2340	2-BROMOETHYL ETHYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2341	1-BROMO-3-METHYLBUT-ANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2342	BROMOMETHYLPROPANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2343	2-BROMOPENTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2344	BROMOPROPANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2344	BROMOPROPANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2345	3-BROMOPROPYNE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2346	BUTANEDIONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2347	BUTYL MERCAPTAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2348	BUTYL ACRYLATES, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2350	BUTYL METHYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2351	BUTYL NITRITES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2351	BUTYL NITRITES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2352	BUTYL VINYL ETHER, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
2353	BUTYRYL CHLORIDE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T8	TP2 TP12 TP13	L4BH	TE1 TE15	2				CE7	338
2354	CHLOROMETHYL ETHYL ETHER	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2356	2-CHLOROPROPANE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2 TP13	L1,5BN		1					33
2357	CYCLOHEXYLAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2358	CYCLOOCTATETRAENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2359	DIALLYLAMINE	3	FTC	II	3+6.1+8		LQ0	P001 IBC02		MP19	T7	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	338
2360	DIALLYL ETHER	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2361	DIISOBUTYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2362	1,1-DICHLOROETHANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2363	ETHYL MERCAPTAN	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2 TP13	L1,5BN		1					33
2364	n-PROPYLBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2366	DIETHYL CARBONATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2367	alpha-METHYLVALERALDE-HYDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2368	alpha-PINENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2370	1-HEXENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2371	ISOPENTENES	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
2372	1,2-DI-(DIMETHYLAMINO) ETHANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2373	DIETHOXYMETHANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2374	3,3-DIETHOXYPROPENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2375	DIETHYL SULPHIDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1 TP13	LGBF		2				CE7	33
2376	2,3-DIHYDROPYRAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2377	1,1-DIMETHOXYETHANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
2378	2-DIMETHYLAMINOACE-TONITRILE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2379	1,3-DIMETHYLBUTYLA-MINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2380	DIMETHYLDIETHOXYSIL-ANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2381	DIMETHYL DISULPHIDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2382	DIMETHYLHYDRAZINE, SYMMETRICAL	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2383	DIPROPYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2384	DI-n-PROPYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2385	ETHYL ISOBUTYRATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2386	1-ETHYLPIPERIDINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2387	FLUOROBENZENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2388	FLUOROTOLUENES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2389	FURAN	3	F1	I	3		LQ3	P001		MP7 MP17	T12	TP2 TP13	L4BN		1					33
2390	2-IODOBUTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2391	IODOMETHYLPROPANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2392	IODOPROPANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2393	ISOBUTYL FORMATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2394	ISOBUTYL PROPIONATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2395	ISOBUTYRYL CHLORIDE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP2	L4BH	TE1 TE15	2				CE7	338
2396	METHACRYLALDEHYDE, STABILIZED	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2397	3-METHYLBUTAN-2-ONE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2398	METHYL tert-BUTYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
2399	1-METHYLPIPERIDINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2400	METHYL ISOVALERATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2401	PIPERIDINE	8	CF1	I	8+3		LQ20	P001		MP8 MP17	T10	TP2	L10BH	TE1	1					883
2402	PROPANETHIOLS	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP13	LGBF		2				CE7	33
2403	ISOPROPENYL ACETATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2404	PROPIONITRILE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2405	ISOPROPYL BUTYRATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2406	ISOPROPYL ISOBUTYRATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2407	ISOPROPYL CHLOROFORMATE	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17					1			CW13 CW28 CW31		663
2409	ISOPROPYL PROPIONATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2410	1,2,3,6-TETRAHYDROPYRIDINE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2411	BUTYRONITRILE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2412	TETRAHYDROTHIOPHENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2413	TETRAPROPYL ORTHOTITANATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1	LGBF		3				CE4	30
2414	THIOPHENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2416	TRIMETHYL BORATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
2417	CARBONYL FLUORIDE, COMPRESSED	2	1TC		2.3+8 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		268
2418	SULPHUR TETRAFLUORIDE	2	2TC		2.3+8		LQ0	P200		MP9					1			CW9 CW10		268
2419	BROMOTRIFLUOROETHYLENE	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
2420	HEXAFLUOROACETONE	2	2TC		2.3+8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		268
2421	NITROGEN TRIOXIDE	2	2TOC	PROHIBITED																
2422	OCTAFLUOROBUT-2-ENE (REFRIGERANT GAS R 1318)	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20
2424	OCTAFLUOROPROPANE (REFRIGERANT GAS R 218)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2426	AMMONIUM NITRATE, LIQUID, hot concentrated solution, in a concentration of more than 80 % but not more than 93 %	5.1	O1		5.1	252 644	LQ0				T7	TP1 TP16 TP17	L4BV	TU3 TU12 TU29 TC3 TE9 TE10 TA1	0					59
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	II	5.1		LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2	W6		CW24	CE6	50
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	III	5.1		LQ13	P504 IBC02 R001		MP2	T4	TP1	LGBV	TU3	3	W6		CW24	CE8	50
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	II	5.1		LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2			CW24	CE6	50
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	III	5.1		LQ13	P504 IBC02 R001		MP2	T4	TP1	LGBV	TU3	3			CW24	CE8	50
2429	CALCIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	II	5.1		LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2			CW24	CE6	50
2429	CALCIUM CHLORATE, AQUEOUS SOLUTION	5.1	O1	III	5.1		LQ13	P504 IBC02 R001		MP2	T4	TP1	LGBV	TU3	3			CW24	CE8	50
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C2-C12 homologues)	8	C4	I	8	274	LQ21	P002 IBC07	B1	MP18	T10	TP2 TP9 TP28	S10AN L10BH	TE1	1					88

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C2-C12 homologues)	8	C4	II	8	274	LQ23	P002 IBC08	B2 B4	MP10	T3	TP2	SGAN L4BN		2				CE10	80
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C2-C12 homologues)	8	C4	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10	T3	TP1	SGAV L4BN		3		VW9		CE11	80
2431	ANISIDINES	6.1	T1	III	6.1		LQ9	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2432	N,N-DIETHYLANILINE	6.1	T1	III	6.1	279	LQ9	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2433	CHLORONITROTOLUENES, LIQUID	6.1	T1	III	6.1		LQ9	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2433	CHLORONITROTOLUENES, SOLID	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2434	DIBENZYLDICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
2435	ETHYLPHENYLDICHLOROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2436	THIOACETIC ACID	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2437	METHYLPHENYLDICHLO-ROSILANE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2				CE6	X80
2438	TRIMETHYLACETYL CHLORIDE	6.1	TFC	I	6.1+3+8		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2439	SODIUM HYDROGENDI-FLUORIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2440	STANNIC CHLORIDE PENTAHYDRATE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2441	TITANIUM TRICHLORIDE, PYROPHORIC or TITANIUM TRICHLORIDE MIXTURE, PYROPHORIC	4.2	SC4	I	4.2+8	537	LQ0	P404		MP13					0	W1				48
2442	TRICHLOROACETYL CHLORIDE	8	C3	II	8		LQ22	P001		MP15	T7	TP2	L4BN		2				CE6	X80
2443	VANADIUM OXYTRICHLORIDE	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2444	VANADIUM TETRACHLORIDE	8	C1	I	8		LQ20	P802		MP8 MP17	T10	TP2	L10BH	TE1	1					X88

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2445	LITHIUM ALKYLS	4.2	SW	I	4.2+4.3	274	LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
2446	NITROCRESOLS, liquid	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2446	NITROCRESOLS, solid	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2447	PHOSPHORUS, WHITE, MOLTEN	4.2	ST3	I	4.2+6.1		LQ0				T21	TP3 TP7 TP26	L10DH(+)	TU14 TU16 TU21 TE3	0			CW28		446
2448	SULPHUR, MOLTEN	4.1	F3	III	4.1	538	LQ0				T1	TP3	LGBV(+)	TU27 TE4 TE6	0					44
2451	NITROGEN TRIFLUORIDE, COMPRESSED	2	1O		2.2+5.1 (+13)		LQ0	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	25
2452	ETHYLACETYLENE, STABILIZED	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	239
2453	ETHYL FLUORIDE (REFRIGERANT GAS R 161)	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2454	METHYL FLUORIDE (REFRIGERANT GAS R 41)	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
2455	METHYL NITRITE	2	2A	PROHIBITED																
2456	2-CHLOROPROPENE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
2457	2,3-DIMETHYLBUTANE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T7	TP1	LGBF		2				CE7	33
2458	HEXADIENES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2459	2-METHYL-1-BUTENE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33
2460	2-METHYL-2-BUTENE	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP1	L1,5BN		2				CE7	33
2461	METHYLPENTADIENE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2463	ALUMINIUM HYDRIDE	4.3	W2	I	4.3		LQ0	P403		MP2					1	W1		CW23		X423
2464	BERYLLIUM NITRATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
2465	DICHLOROISOCYANURIC ACID, DRY or DICHLOROISOCYANURIC ACID SALTS	5.1	O2	II	5.1	135	LQ11	P002 IBC08	B4	MP10			SGAN	TU3	2			CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2466	POTASSIUM SUPEROXIDE	5.1	O2	I	5.1		LQ0	P503 IBC06	B1	MP2					1			CW24		55
2468	TRICHLOROISOCYANURIC ACID, DRY	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP10			SGAN	TU3	2			CW24	CE10	50
2469	ZINC BROMATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3 B4	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2470	PHENYLACETONITRILE, LIQUID	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2471	OSMIUM TETROXIDE	6.1	T5	I	6.1		LQ0	P002 IBC07	PP30 B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
2473	SODIUM ARSANILATE	6.1	T3	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2474	THIOPHOSGENE	6.1	T1	II	6.1	279	LQ17	P001		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2475	VANADIUM TRICHLORIDE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2477	METHYL ISOTHIOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	274 539	LQ0	P001 IBC02		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1	274 539	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP13 TP28	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
2480	METHYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P601 PR5		MP2					1			CW13 CW28 CW31		663
2481	ETHYL ISOCYANATE	3	FT1	I	3+6.1		LQ0	P601 PR5		MP2	T14	TP2 TP13			1			CW13 CW28		336
2482	n-PROPYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2483	ISOPROPYL ISOCYANATE	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2484	tert-BUTYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2485	n-BUTYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2486	ISOBUTYL ISOCYANATE	3	FT1	II	3+6.1		LQ0	P001		MP19	T8	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2487	PHENYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2488	CYCLOHEXYL ISOCYANATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2490	DICHLOROISOPROPYL ETHER	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2491	ETHANOLAMINE or ETHANOLAMINE SOLUTION	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2493	HEXAMETHYLENEIMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2495	IODINE PENTAFLUORIDE	5.1	OTC	I	5.1+6.1-+8		LQ0	P200		MP2			L10DH	TU3 TE16	1			CW24 CW28		568

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2496	PROPIONIC ANHYDRIDE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2498	1,2,3,6-TETRAHYDRO-BENZALDEHYDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2501	TRIS-(1-AZIRIDINYL) PHOSPHINE OXIDE SOLUTION	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2501	TRIS-(1-AZIRIDINYL) PHOSPHINE OXIDE SOLUTION	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2502	VALERYL CHLORIDE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2503	ZIRCONIUM TETRA-CHLORIDE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2504	TETRABROMOETHANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2505	AMMONIUM FLUORIDE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2506	AMMONIUM HYDROGEN SULPHATE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAV		2		VW9		CE10	80
2507	CHLOROPLATINIC ACID, SOLID	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2508	MOLYBDENUM PENTA-CHLORIDE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2509	POTASSIUM HYDROGEN SULPHATE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAV		2		VW9		CE10	80
2511	2-CHLOROPROPIONIC ACID, SOLUTION	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BN		3				CE8	80
2511	2-CHLOROPROPIONIC ACID, SOLID	8	C4	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10	T4	TP2	SGAV L4BN		3		VW9		CE11	80
2512	AMINOPHENOLS (o-, m-, p-)	6.1	T2	III	6.1	279	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2513	BROMOACETYL BROMIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	X80
2514	BROMOBENZENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2515	BROMOFORM	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2516	CARBON TETRABROMIDE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2517	1-CHLORO-1,1-DIFLUORO-ETHANE (REFRIGERANT GAS R 142b)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
2518	1,5,9-CYCLODODECA-TRIENE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2520	CYCLOOCTADIENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2521	DIKETENE, STABILIZED	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2522	2-DIMETHYLAMINOETHYL METHACRYLATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	69
2524	ETHYL ORTHOFORMATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2525	ETHYL OXALATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2526	FURFURYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2527	ISOBUTYL ACRYLATE, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2528	ISOBUTYL ISOBUTYRATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2529	ISOBUTYRIC ACID	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2531	METHACRYLIC ACID, STABILIZED	8	C3	II	8		LQ22	P001 IBC02 LP01		MP15	T7	TP1 TP18	L4BN		2				CE8	89
2533	METHYL TRICHLOROACETATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2534	METHYLCHLOROSILANE	2	2TFC		2.3+2.1 +8		LQ0	P200		MP9					1			CW9 CW10		263
2535	4-METHYLMORPHOLINE (N-METHYLMORPHOLINE)	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2536	METHYLTETRAHYDROFURAN	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2538	NITRONAPHTHALENE	4.1	F1	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAV		3	W1	VW1		CE11	40
2541	TERPINOLENE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2542	TRIBUTYLAMINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2545	HAFNIUM POWDER, DRY	4.2	S4	I	4.2	540	LQ0	P404		MP13					0	W1				43
2545	HAFNIUM POWDER, DRY	4.2	S4	II	4.2	540	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
2545	HAFNIUM POWDER, DRY	4.2	S4	III	4.2	540	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
2546	TITANIUM POWDER, DRY	4.2	S4	I	4.2	540	LQ0	P404		MP13					0	W1				43
2546	TITANIUM POWDER, DRY	4.2	S4	II	4.2	540	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
2546	TITANIUM POWDER, DRY	4.2	S4	III	4.2	540	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
2547	SODIUM SUPEROXIDE	5.1	O2	I	5.1		LQ0	P503 IBC06	B1	MP2					1			CW24		55
2548	CHLORINE PENTAFLUORIDE	2	2TOC		2.3+5.1 +8		LQ0	P200		MP9					1			CW9 CW10		265
2552	HEXAFLUOROACETONE HYDRATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2554	METHYLALLYL CHLORIDE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1 TP13	LGBF		2				CE7	33
2555	NITROCELLULOSE WITH WATER (not less than 25 % water, by mass)	4.1	D	II	4.1	541	LQ0	P406		MP2					2	W1			CE10	40
2556	NITROCELLULOSE WITH ALCOHOL (not less than 25 % alcohol, by mass, and not more than 12,6 % nitrogen, by dry mass)	4.1	D	II	4.1	541	LQ0	P406		MP2					2	W1			CE10	40
2557	NITROCELLULOSE, with not more than 12,6 % nitrogen, by dry mass, MIXTURE WITH or WITHOUT PLASTICIZER, WITH or WITHOUT PIGMENT	4.1	D	II	4.1	241 541	LQ0	P406		MP2					2	W1			CE10	40
2558	EPIBROMOHYDRIN	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2560	2-METHYLPENTAN-2-OL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2561	3-METHYL-1-BUTENE	3	F1	I	3		LQ3	P001		MP7 MP17	T11	TP2	L4BN		1					33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2564	TRICHLOROACETIC ACID SOLUTION	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2564	TRICHLOROACETIC ACID SOLUTION	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2565	DICYCLOHEXYLAMINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2567	SODIUM PENTACHLOROPHENATE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2570	CADMIUM COMPOUND	6.1	T5	I	6.1	274 596	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2570	CADMIUM COMPOUND	6.1	T5	II	6.1	274 596	LQ18	P002 IBC07		MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2570	CADMIUM COMPOUND	6.1	T5	III	6.1	274 596	LQ9	P002 IBC07 R001		MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2571	ALKYLSULPHURIC ACIDS	8	C3	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BN		2				CE6	80
2572	PHENYLHYDRAZINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2573	THALLIUM CHLORATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
2574	TRICRESYL PHOSPHATE with more than 3 % ortho isomer	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2576	PHOSPHORUS OXYBROMIDE, MOLTEN	8	C1	II	8		LQ0				T7	TP3 TP13	L4BN		0					80
2577	PHENYLACETYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2578	PHOSPHORUS TRIOXIDE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2579	PIPERAZINE	8	C8	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAV L4BN		3		VW9		CE11	80
2580	ALUMINIUM BROMIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2581	ALUMINIUM CHLORIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2582	FERRIC CHLORIDE SOLUTION	8	C1	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2583	ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with more than 5 % free sulphuric acid	8	C2	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			S4BN		2				CE10	80
2584	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with more than 5 % free sulphuric acid	8	C1	II	8	274	LQ22	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4BN		2				CE6	80
2585	ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with not more than 5 % free sulphuric acid	8	C4	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2586	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with not more than 5 % free sulphuric acid	8	C3	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2587	BENZOQUINONE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	T7	I	6.1	61	LQ0	P002 IBC02		MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2589	VINYL CHLOROACETATE	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2590	WHITE ASBESTOS (chrysotile, actinolite, anthophyllite, tremolite)	9	M1	III	9	168 542	LQ27	P002 IBC08 R001	PP37 B2 B4	MP10			SGAH	TU15 TE1	3	W1		CW13 CW28 CW31	CE11	90
2591	XENON, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
2599	CHLOROTRIFLUOROMETHANE AND TRIFLUOROMETHANE AZEOTROPIC MIXTURE with approximately 60 % chlorotrifluoromethane (REFRIGERANT GAS R 503)	2	2A		2.2 (+13)		LQ1	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2600	CARBON MONOXIDE AND HYDROGEN MIXTURE, COMPRESSED	2	1TF		2.3+2.1 (+13)		LQ0	P200		MP9			CxBH(M)	TE1	1			CW9 CW10		263
2601	CYCLOBUTANE	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
2602	DICHLORODIFLUOROMETHANE AND 1,1-DIFLUOROETHANE AZEOTROPIC MIXTURE with approximately 74 % dichlorodifluoromethane (REFRIGERANT GAS R 500)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
2603	CYCLOHEPTATRIENE	3	FT1	II	3+6.1		LQ0	P001 IBC02		MP19	T7	TP1 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2604	BORON TRIFLUORIDE DIETHYL ETHERATE	8	CF1	I	8+3		LQ20	P001		MP8 MP17	T10	TP2	L10BH	TE1	1					883
2605	METHOXYMETHYL ISOCYANATE	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2606	METHYL ORTHOSILICATE	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2607	ACROLEIN DIMER, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2608	NITROPROPANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2609	TRIALLYL BORATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2610	TRIALLYLAMINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2611	PROPYLENE CHLORO-HYDRIN	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2612	METHYL PROPYL ETHER	3	F1	II	3		LQ4	P001 IBC02	B8	MP19	T7	TP2	L1,5BN		2				CE7	33
2614	METHALLYL ALCOHOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2615	ETHYL PROPYL ETHER	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2616	TRIISOPROPYL BORATE	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2616	TRIISOPROPYL BORATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2617	METHYLCYCLOHEXANOLS, flammable	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2618	VINYLTOLUENES, STABILIZED	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	39
2619	BENZYLDIMETHYLAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2620	AMYL BUTYRATES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2621	ACETYL METHYL CARBINOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2622	GLYCIDALDEHYDE	3	FT1	II	3+6.1		LQ0	P001 IBC02	B8	MP19	T7	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2623	FIRELIGHTERS, SOLID with flammable liquid	4.1	F1	III	4.1		LQ9	P002 LP01 R001	PP15	MP11					4	W1			CE11	40
2624	MAGNESIUM SILICIDE	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
2626	CHLORIC ACID, AQUEOUS SOLUTION with not more than 10 % chloric acid	5.1	O1	II	5.1	613	LQ10	P504 IBC02		MP2			L4BN	TU3	2			CW24	CE6	50
2627	NITRITES, INORGANIC, N.O.S.	5.1	O2	II	5.1	103 274	LQ11	P002 IBC08	B4	MP10			SGAN	TU3	2			CW24	CE10	50
2628	POTASSIUM FLUOROACETATE	6.1	T2	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
2629	SODIUM FLUOROACETATE	6.1	T2	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		66
2630	SELENATES or SELENITES	6.1	T5	I	6.1	274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2642	FLUOROACETIC ACID	6.1	T2	I	6.1		LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2643	METHYL BROMOACETATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2644	METHYL IODIDE	6.1	T1	I	6.1		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2645	PHENACYL BROMIDE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2646	HEXACHLOROCYCLO-PENTADIENE	6.1	T1	I	6.1		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2647	MALONONITRILE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2648	1,2-DIBROMOBUTAN-3-ONE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2649	1,3-DICHLOROACETONE	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2650	1,1-DICHLORO-1-NITRO-ETHANE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2651	4,4′-DIAMINODIPHE-NYLMETHANE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2653	BENZYL IODIDE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2655	POTASSIUM FLUORO-SILICATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2656	QUINOLINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2657	SELENIUM DISULPHIDE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2659	SODIUM CHLORO-ACETATE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2660	NITROTOLUIDINES (MONO)	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2661	HEXACHLOROACETONE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2662	HYDROQUINONE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2664	DIBROMOMETHANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2667	BUTYLTOLUENES	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2668	CHLOROACETONITRILE	6.1	TF1	II	6.1+3		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2669	CHLOROCRESOLS, liquid	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2669	CHLOROCRESOLS, solid	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10	T7	TP2	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2670	CYANURIC CHLORIDE	8	C4	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
2671	AMINOPYRIDINES (o-, m-, p-)	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2672	AMMONIA SOLUTION, relative density between 0,880 and 0,957 at 15 °C, in water, with more than 10 % but not more than 35 % ammonia	8	C5	III	8	543	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1	L4BN		3				CE8	80
2673	2-AMINO-4-CHLOROPHENOL	6.1	T2	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2674	SODIUM FLUOROSILICATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2676	STIBINE	2	2TF		2.3+2.1		LQ0	P200		MP9					1			CW9 CW10		263
2677	RUBIDIUM HYDROXIDE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2677	RUBIDIUM HYDROXIDE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2678	RUBIDIUM HYDROXIDE	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2679	LITHIUM HYDROXIDE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2679	LITHIUM HYDROXIDE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2680	LITHIUM HYDROXIDE MONOHYDRATE	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2681	CAESIUM HYDROXIDE SOLUTION	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2681	CAESIUM HYDROXIDE SOLUTION	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2682	CAESIUM HYDROXIDE	8	C6	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2683	AMMONIUM SULPHIDE SOLUTION	8	CFT	II	8+3+6.1		LQ22	P001 IBC01		MP15	T7	TP2 TP13	L4BN		2			CW13 CW28	CE6	86
2684	DIETHYLAMINOPROPYLA-MINE	3	FC	III	3+8		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BN		3				CE4	38
2685	N,N-DIETHYLETHYLENE-DIAMINE	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2686	2-DIETHYLAMINOETHA-NOL	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2687	DICYCLOHEXYLAM-MONIUM NITRITE	4.1	F3	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2688	1-BROMO-3-CHLOROPROPANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2689	GLYCEROL alpha-MONOCHLOROHYDRIN	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2690	N,n-BUTYLIMIDAZOLE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2691	PHOSPHORUS PENTABROMIDE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2692	BORON TRIBROMIDE	8	C1	I	8		LQ20	P602		MP8 MP17	T20	TP2 TP12 TP13	L10BH	TE1	1					X88
2693	BISULPHITES, AQUEOUS SOLUTION, N.O.S.	8	C1	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
2698	TETRAHYDROPHTHALIC ANHYDRIDES with more than 0,05 % of maleic anhydride	8	C4	III	8	169	LQ24	P002 IBC08 LP02 R001	PP14 B3	MP10			SGAV L4BN		3		VW9		CE11	80
2699	TRIFLUOROACETIC ACID	8	C3	I	8		LQ20	P001		MP8 MP17	T10	TP2 TP12	L10BH	TE1	1					88

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2705	1-PENTOL	8	C9	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2707	DIMETHYLDIOXANES	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	33
2707	DIMETHYLDIOXANES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2709	BUTYLBENZENES	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2710	DIPROPYL KETONE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2713	ACRIDINE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2714	ZINC RESINATE	4.1	F3	III	4.1		LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2715	ALUMINIUM RESINATE	4.1	F3	III	4.1		LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40
2716	1,4-BUTYNEDIOL	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2717	CAMPHOR, synthetic	4.1	F1	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAV		3	W1	VW1		CE11	40
2719	BARIUM BROMATE	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
2720	CHROMIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2721	COPPER CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50
2722	LITHIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2723	MAGNESIUM CHLORATE	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP2			SGAV	TU3	2		VW8	CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2724	MANGANESE NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2725	NICKEL NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2726	NICKEL NITRITE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2727	THALLIUM NITRATE	6.1	TO2	II	6.1+5.1		LQ18	P002 IBC06	B2	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	65
2728	ZIRCONIUM NITRATE	5.1	O2	III	5.1		LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
2729	HEXACHLOROBENZENE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2730	NITROANISOLES, LIQUID	6.1	T1	III	6.1	279	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2730	NITROANISOLES, SOLID	6.1	T2	III	6.1	279	LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2732	NITROBROMOBENZENES, LIQUID	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2732	NITROBROMOBENZENES, SOLID	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T4	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	FC	I	3+8	274 544	LQ3	P001		MP7 MP17	T14	TP1 TP9 TP27	L10CH	TU14 TE1	1					338
2733	AMINES FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S	3	FC	II	3+8	274 544	LQ4	P001 IBC02		MP19	T11	TP1 TP27	L4BH	TE1 TE15	2				CE7	338
2733	AMINES FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S	3	FC	III	3+8	274 544	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BN		3				CE4	38

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2734	AMINES LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	CF1	I	8+3	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					883
2734	AMINES LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	CF1	II	8+3	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	83
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	C7	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	C7	II	8	274	LQ22	P001 IBC02		MP15	T11	TP1 TP27	L4BN		2				CE6	80
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	C7	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
2738	N-BUTYLANILINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2739	BUTYRIC ANHYDRIDE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2740	n-PROPYL CHLOROFORMATE	6.1	TFC	I	6.1+3+8		LQ0	P602		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
2741	BARIUM HYPOCHLORITE with more than 22 % available chlorine	5.1	OT2	II	5.1+6.1		LQ11	P002 IBC08	B2 B4	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
2742	CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	TFC	II	6.1+3+8	274 561	LQ17	P001 IBC01		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	638
2743	n-BUTYL CHLOROFORMATE	6.1	TFC	II	6.1+3+8		LQ17	P001		MP15	T20	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	638
2744	CYCLOBUTYL CHLOROFORMATE	6.1	TFC	II	6.1+3+8		LQ17	P001 IBC01		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	638
2745	CHLOROMETHYL CHLOROFORMATE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
2746	PHENYL CHLOROFORMATE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
2747	tert-BUTYLCYCLOHEXYL CHLOROFORMATE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2748	2-ETHYLHEXYL CHLOROFORMATE	6.1	TC1	II	6.1+8		LQ17	P001 IBC02		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2749	TETRAMETHYLSILANE	3	F1	I	3		LQ3	P001		MP7 MP12	T14	TP2	L4BN		1					33
2750	1,3-DICHLOROPRO-PANOL-2	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2751	DIETHYLTHIOPHOSPHO-RYL CHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2752	1,2-EPOXY-3-ETHOXYPRO-PANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2753	N-ETHYLBENZYLTOLUI-DINES, LIQUID	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2753	N-ETHYLBENZYLTOLUI-DINES, SOLID	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2754	N-ETHYLTOLUIDINES	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2764	TRIAZINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2764	TRIAZINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2780	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2780	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2781	BIPYRIDILIUM PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2785	4-THIAPENTANAL	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	T3	I	6.1	43 274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	T3	II	6.1	43 274	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	T3	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2789	ACETIC ACID, GLACIAL or ACETIC ACID SOLUTION, more than 80 % acid, by mass	8	CF1	II	8+3		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	83
2790	ACETIC ACID SOLUTION, not less than 50 % but not more than 80 % acid, by mass	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2790	ACETIC ACID SOLUTION, more than 10 % and less than 50 % acid, by mass	8	C3	III	8	597	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2793	FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS in a form liable to self-heating	4.2	S4	III	4.2	107 592	LQ0	P003 IBC08 LP02 R001	PP20 B3 B6	MP14					3	W1	VW4		CE11	40
2794	BATTERIES, WET, FILLED WITH ACID, electric storage	8	C11		8	295 598	LQ0	P801 P801a							3		VW14		CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2795	BATTERIES, WET, FILLED WITH ALKALI, electric storage	8	C11		8	295 598	LQ0	P801 P801a							3		VW14		CE8	80
2796	SULPHURIC ACID with not more than 51 % acid or BATTERY FLUID, ACID	8	C1	II	8		LQ22	P001 IBC02		MP15	T8	TP2 TP12	L4BN		2				CE6	80
2797	BATTERY FLUID, ALKALI	8	C5	II	8		LQ22	P001 IBC02			T7	TP2	L4BN		2				CE6	80
2798	PHENYLPHOSPHORUS DICHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2799	PHENYLPHOSPHORUS THIODICHLORIDE	8	C3	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2800	BATTERIES, WET, NON-SPILLABLE, electric storage	8	C11		8	238 295 598	LQ0	P003 P801a	PP16						3		VW14		CE8	80
2801	DYE, LIQUID, CORROSIVE, N.O.S or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	C9	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	C9	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, LIQUID, CORROSIVE, N.O.S.	8	C9	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
2802	COPPER CHLORIDE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2803	GALLIUM	8	C10	III	8		LQ24	P800	PP41	MP10			SGAV L4BN		3		VW9		CE11	80
2805	LITHIUM HYDRIDE, FUSED SOLID	4.3	W2	II	4.3		LQ11	P410 IBC04		MP14			SGAN		2	W1		CW23	CE10	423
2806	LITHIUM NITRIDE	4.3	W2	I	4.3		LQ0	P403 IBC04	B1	MP2					1	W1		CW23		X423
2807	Magnetized material	9	M11	EXEMPT																
2809	MERCURY	8	C9	III	8	599	LQ19	P800		MP15			L4BN		3				CE8	80
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	T1	I	6.1	274 614	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	T1	II	6.1	274 614	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	T1	III	6.1	274 614	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP9 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	T2	I	6.1	274 614	LQ0	P002 IBC02		MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	T2	II	6.1	274 614	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	T2	III	6.1	274 614	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2812	Sodium aluminate, solid	8	C6	EXEMPT																
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	W2	I	4.3	222 274	LQ0	P403 IBC99		MP2					0	W1		CW23		X423
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	W2	II	4.3	222 274	LQ11	P410 IBC07	B2	MP14			SGAN		0	W1		CW23	CE10	423
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	W2	III	4.3	222 274	LQ12	P410 IBC08 R001	B4	MP14			SGAN		0	W1	VW5	CW23	CE11	423
2814	INFECTIOUS SUBSTANCE, AFFECTING HUMANS (risk groups 3 and 4)	6.2	I1		6.2	274 634	LQ0	P620		MP5					0	W9		CW13 CW18 CW26 CW28	CE14	606

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2814	INFECTIOUS SUBSTANCE, AFFECTING HUMANS (risk group 2)	6.2	I1		6.2	274 634	LQ0	P620		MP5			L4BH	TU15 TE1	2	W9		CW13 CW18 CW26 CW28	CE14	606
2815	N-AMINOETHYLPIPER-AZINE	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2817	AMMONIUM HYDROGEN-DIFLUORIDE SOLUTION	8	CT1	II	8+6.1		LQ22	P001 IBC02		MP15	T8	TP2 TP12 TP13	L4DH	TU14 TE17 TT4	2			CW13 CW28	CE6	86
2817	AMMONIUM HYDROGEN-DIFLUORIDE SOLUTION	8	CT1	III	8+6.1		LQ19	P001 IBC03 R001		MP15	T4	TP1 TP12 TP13	L4DH	TU14	3			CW13 CW28	CE8	86
2818	AMMONIUM POLYSUL-PHIDE SOLUTION	8	CT1	II	8+6.1		LQ22	P001 IBC02		MP15	T7	TP2 TP13	L4BN		2			CW13 CW28	CE6	86
2818	AMMONIUM POLYSUL-PHIDE SOLUTION	8	CT1	III	8+6.1		LQ19	P001 IBC03 R001		MP15	T4	TP1 TP13	L4BN		3			CW13 CW28	CE8	86
2819	AMYL ACID PHOSPHATE	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2820	BUTYRIC ACID	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2821	PHENOL SOLUTION	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2821	PHENOL SOLUTION	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2822	2-CHLOROPYRIDINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2823	CROTONIC ACID	8	C4	III	8		LQ24	P001 IBC03 LP01 R001		MP10	T4	TP1	SGAV L4BN		3		VW9		CE11	80
2826	ETHYL CHLOROTHIO-FORMATE	8	CF1	II	8+3		LQ22	P001		MP15	T7	TP2	L4BN		2				CE6	83
2829	CAPROIC ACID	8	C3	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2830	LITHIUM FERROSILICON	4.3	W2	II	4.3		LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2831	1,1,1-TRICHLOROETHANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2834	PHOSPHOROUS ACID	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10	T3	TP1	SGAV		3		VW9		CE11	80
2835	SODIUM ALUMINIUM HYDRIDE	4.3	W2	II	4.3		LQ11	P410 IBC04		MP14			SGAN		2	W1		CW23	CE10	423
2837	BISULPHATES, AQUEOUS SOLUTION	8	C1	II	8	274	LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2837	BISULPHATES, AQUEOUS SOLUTION	8	C1	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
2838	VINYL BUTYRATE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
2839	ALDOL	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2840	BUTYRALDOXIME	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2841	DI-n-AMYLAMINE	3	FT1	III	3+6.1		LQ7	P001 IBC03 R001		MP19	T4	TP1	L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
2842	NITROETHANE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2844	CALCIUM MANGANESE SILICON	4.3	W2	III	4.3		LQ12	P410 IBC08 R001	B2 B4	MP14			SGAN		3	W1	VW5 VW7	CW23	CE11	423
2845	PYROPHORIC LIQUID, ORGANIC, N.O.S.	4.2	S1	I	4.2	274	LQ0	P400 PR1		MP2	T22	TP2 TP7 TP9	L21DH	TU14 TC1 TE1 TM1	0	W1				333
2846	PYROPHORIC SOLID, ORGANIC, N.O.S.	4.2	S2	I	4.2	274	LQ0	P404		MP13					0	W1				43
2849	3-CHLOROPROPANOL-1	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2850	PROPYLENE TETRAMER	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2851	BORON TRIFLUORIDE DIHYDRATE	8	C1	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
2852	DIPICRYL SULPHIDE, WETTED with not less than 10 % water, by mass	4.1	D	I	4.1	545	LQ0	P406	PP24	MP2					1	W1				40
2853	MAGNESIUM FLUOROSILICATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2854	AMMONIUM FLUOROSILICATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2855	ZINC FLUOROSILICATE	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2856	FLUOROSILICATES, N.O.S.	6.1	T5	III	6.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2857	REFRIGERATING MACHINES containing non-flammable, non-toxic, liquefied gas or ammonia solutions (UN 2672)	2	6A		2.2	119	LQ0	P003	PP32	MP9					3			CW9	CE2	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2858	ZIRCONIUM, DRY, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	F3	III	4.1	546	LQ9	P002 LP02 R001		MP11					3	W1	VW1		CE11	40
2859	AMMONIUM METAVANADATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2861	AMMONIUM POLYVANADATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2862	VANADIUM PENTOXIDE, non-fused form	6.1	T5	III	6.1	600	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2863	SODIUM AMMONIUM VANADATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2864	POTASSIUM METAVANADATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2865	HYDROXYLAMINE SULPHATE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2869	TITANIUM TRICHLORIDE MIXTURE	8	C2	II	8		LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
2869	TITANIUM TRICHLORIDE MIXTURE	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2870	ALUMINIUM BORO-HYDRIDE	4.2	SW	I	4.2+4.3		LQ0	P400 PR1		MP2			L21DH	TU14 TC1 TE1 TM1	0	W1				X333
2870	ALUMINIUM BORO-HYDRIDE IN DEVICES	4.2	SW	I	4.2+4.3		LQ0	P002 PR1	PP13	MP2					0	W1				X333
2871	ANTIMONY POWDER	6.1	T5	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2872	DIBROMOCHLOROPRO-PANES	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2872	DIBROMOCHLORO-PROPANES	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2873	DIBUTYLAMINOETHANOL	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2874	FURFURYL ALCOHOL	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2875	HEXACHLOROPHENE	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2876	RESORCINOL	6.1	T2	III	6.1		LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
2878	TITANIUM SPONGE GRANULES or TITANIUM SPONGE POWDERS	4.1	F3	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
2879	SELENIUM OXYCHLORIDE	8	CT1	I	8+6.1		LQ20	P001		MP8 MP17	T10	TP2 TP12 TP13	L10BH	TE1	1			CW13 CW28		X886
2880	CALCIUM HYPOCHLORITE, HYDRATED, or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5,5 % but not more than 10 % water	5.1	O2	II	5.1		LQ11	P002 IBC08	B2 B4	MP10			SGAN	TU3	2			CW24	CE10	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2881	METAL CATALYST, DRY	4.2	S4	I	4.2	274	LQ0	P404		MP13					0	W1				43
2881	METAL CATALYST, DRY	4.2	S4	II	4.2	274	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
2881	METAL CATALYST, DRY	4.2	S4	III	4.2	274	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
2900	INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only (risk groups 3 and 4)	6.2	I2		6.2	274 634	LQ0	P620		MP5			L4BH	TU15 TE1	2	W9		CW13 CW18 CW26 CW28	CE14	606
2900	INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only (risk group 2)	6.2	I2		6.2	274 634	LQ0	P620		MP5					0	W9		CW13 CW18 CW26 CW28	CE14	606
2901	BROMINE CHLORIDE	2	2TOC		2.3+5.1 +8 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		265
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S., flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S., flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
2903	PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S., flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
2904	CHLOROPHENOLATES, LIQUID or PHENOLATES, LIQUID	8	C9	III	8		LQ19	P001 IBC03 LP01 R001		MP15			L4BN		3				CE8	80
2905	CHLOROPHENOLATES, SOLID or PHENOLATES, SOLID	8	C10	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2907	ISOSORBIDE DINITRATE MIXTURE with not less than 60 % lactose, mannose, starch or calcium hydrogen phosphate	4.1	D	II	4.1	127	LQ8	P406 IBC06	PP26 B2	MP2					2	W1			CE10	40
2908	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — EMPTY PACKAGING	7			None	290	LQ0	See 2.2.7	See 4.1.9.1.3						4			CW33	CE15	70
2909	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM	7			None	290	LQ0	See 2.2.7	See 4.1.9.1.3						4			CW33	CE15	70
2910	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — LIMITED QUANTITY OF MATERIAL	7			None	290	LQ0	See 2.2.7	See 4.1.9.1.3						4				CE15	70
2911	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - INSTRUMENTS or ARTICLES	7			None	290	LQ0	See 2.2.7	See 4.1.9.1.3						4			CW33	CE15	70
2912	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3		T5	TP4	L2,65 CN(+) S2,65 AN(+)	TU36 TT7 TM7	0			CW33	CE15	70

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2913	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3						0			CW33	CE15	70
2915	RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3						0			CW33	CE15	70
2916	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3						0			CW33	CE15	70
2917	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3						0			CW33	CE15	70
2919	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, non fissile or fissile-excepted	7			7X	172	LQ0	See 2.2.7 and 4.1.9	See 4.1.9.1.3						0			CW33	CE15	70
2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	8	CF1	I	8+3	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					883
2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	8	CF1	II	8+3	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	83

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2921	CORROSIVE SOLID, FLAMMABLE, N.O.S.	8	CF2	I	8+4.1	274	LQ21	P002 IBC05		MP18			S10AN L10BH	TE1	1					884
2921	CORROSIVE SOLID, FLAMMABLE, N.O.S.	8	CF2	II	8+4.1	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	84
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	CT1	I	8+6.1	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10BH	TE1	1			CW13 CW28		886
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	CT1	II	8+6.1	274	LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2			CW13 CW28	CE6	86
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	CT1	III	8+6.1	274	LQ19	P001 IBC03 R001		MP15	T7	TP1 TP28	L4BN		3			CW13 CW28	CE8	86
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	CT2	I	8+6.1	274	LQ21	P002 IBC05		MP18			S10AN L10BH	TE1	1			CW13 CW28		886
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	CT2	II	8+6.1	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2			CW13 CW28	CE10	86
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	CT2	III	8+6.1	274	LQ24	P002 IBC08 R001	B3	MP10			SGAV L4BN		3		VW9	CW13 CW28	CE11	86
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	I	3+8	274	LQ3	P001		MP7 MP17	T14	TP2 TP9	L10CH	TU14 TE1	1					338
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	II	3+8	274	LQ4	P001 IBC02		MP19	T11	TP2 TP27	L4BH	TE1 TE15	2				CE7	338

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	III	3+8	274	LQ7	P001 IBC03 R001		MP19	T7	TP1 TP28	L4BN		3				CE4	38
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	FC1	II	4.1+8	274	LQ0	P002 IBC06	B2	MP10			SGAN		2	W1			CE10	48
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	FC1	III	4.1+8	274	LQ0	P002 IBC06 R001		MP10			SGAN		3	W1			CE11	48
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	FT1	II	4.1+6.1	274	LQ0	P002 IBC06	B2	MP10			SGAN		2	W1		CW28	CE10	46
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	FT1	III	4.1+6.1	274	LQ0	P002 IBC06 R001		MP10			SGAN		3	W1		CW28	CE11	46
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	TC1	I	6.1+8	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	TC1	II	6.1+8	274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	TC2	I	6.1+8	274	LQ0	P002 IBC05		MP18			S10AH	TU14 TU15 TE1	1			CW13 CW28 CW31		668

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	TC2	II	6.1+8	274	LQ18	P002 IBC06	B2	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	68
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF1	I	6.1+3	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF1	II	6.1+3	274	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
2930	TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF3	I	6.1+4.1	274	LQ0	P002 IBC05		MP18					1			CW13 CW28 CW31		664
2930	TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF3	II	6.1+4.1	274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	64
2931	VANADYL SULPHATE	6.1	T5	II	6.1		LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
2933	METHYL 2-CHLOROPROPIONATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2934	ISOPROPYL 2-CHLOROPROPIONATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

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	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2935	ETHYL 2-CHLOROPROPIONATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2936	THIOLACTIC ACID	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2937	alpha-METHYLBENZYL ALCOHOL	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2940	9-PHOSPHABICYCLONONANES (CYCLOOCTADIENE PHOSPHINES)	4.2	S2	II	4.2		LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
2941	FLUOROANILINES	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2942	2-TRIFLUOROMETHYLANILINE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2943	TETRAHYDROFURFURYLAMINE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2945	N-METHYLBUTYLAMINE	3	FC	II	3+8		LQ4	P001 IBC02		MP19	T7	TP1	L4BH	TE1 TE15	2				CE7	338
2946	2-AMINO-5-DIETHYLAMINOPENTANE	6.1	T1	III	6.1		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
2947	ISOPROPYL CHLOROACETATE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
2948	3-TRIFLUOROMETHYL-ANILINE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2949	SODIUM HYDROSULPHIDE with not less than 25 % water of crystallization	8	C6	II	8	523	LQ23	P002 IBC08	B2 B4	MP10	T7	TP2	L4BN SGAN		2				CE10	80
2950	MAGNESIUM GRANULES, COATED, particle size not less than 149 microns	4.3	W2	III	4.3		LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
2956	5-tert-BUTYL-2,4,6-TRINITRO-m-XYLENE (MUSK XYLENE)	4.1	SR1	III	4.1	638	LQ0	P409		MP2					3	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2965	BORON TRIFLUORIDE DIMETHYL ETHERATE	4.3	WFC	I	4.3+3+8		LQ0	P401		MP2	T10	TP2 TP7	L10DH	TU4 TU14 TU22 TE1 TM2	0	W1		CW23		382
2966	THIOGLYCOL	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
2967	SULPHAMIC ACID	8	C2	III	8		LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
2968	MANEB, STABILIZED or MANEB PREPARATION, STABILIZED against self-heating	4.3	W2	III	4.3	547	LQ12	P002 IBC08 R001	B4	MP14			SGAN		0	W1	VW5	CW23	CE11	423
2969	CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE	9	M11	II	9	141	LQ25	P002 IBC08	PP34 B2 B4	MP10			SGAV		2	W1	VW9	CW31	CE9	90
2977	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE	7			7X+7E +8	172	LQ0	zie 2.2.7 en 4.1.9	see 4.1.9.1.3						0			CW33	CE15	78

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2978	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non fissile or fissile-excepted	7			7X+8	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	78
2983	ETHYLENE OXIDE AND PROPYLENE OXIDE MIXTURE, not more than 30 % ethylene oxide	3	FT1	I	3+6.1		LQ0	P200		MP7 MP17	T14	TP2 TP7 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8 % but less than 20 % hydrogen peroxide (stabilized as necessary)	5.1	O1	III	5.1	65	LQ13	P504 IBC02 R001	B5	MP15	T4	TP1 TP6 TP24	LGBV	TU3 TC2 TE8 TE11 TT1	3			CW24	CE8	50
2985	CHLOROSILANES, FLAMMABLE, CORROSIVE, N.O.S.	3	FC	II	3+8	274 548	LQ4	P001 IBC02		MP19	T11	TP2 TP13 TP27	L4BH	TE1 TE15	2				CE7	X338
2986	CHLOROSILANES, CORROSIVE, FLAMMABLE, N.O.S.	8	CF1	II	8+3	274 548	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	X83
2987	CHLOROSILANES, CORROSIVE, N.O.S.	8	C3	II	8	274 548	LQ22	P001 IBC02		MP15	T14	TP2 TP27	L4BN		2				CE6	X80
2988	CHLOROSILANES, WATER-REACTIVE, FLAMMABLE, CORROSIVE, N.O.S.	4.3	WFC	I	4.3+3+8	274 549	LQ0	P401 PR2		MP2	T10	TP2 TP7 TP9 TP13	L10DH	TU14 TU26 TE1 TM2 TM3	0	W1		CW23		X338

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2989	LEAD PHOSPHITE, DIBASIC	4.1	F3	II	4.1		LQ8	P002 IBC08	B2 B4	MP11			SGAN		2	W1			CE10	40
2989	LEAD PHOSPHITE, DIBASIC	4.1	F3	III	4.1		LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
2990	LIFE-SAVING APPLIANCES, SELF-INFLATING	9	M5		9	296 635	LQ0	P905							3	W1			CE2	90
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

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	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
2995	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

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	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3014	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC,	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
3022	1,2-BUTYLENE OXIDE, STABILIZED	3	F1	II	3		LQ4	P001 IBC02 R001		MP19	T4	TP1	LGBF		2				CE7	339
3023	2-METHYL-2-HEPTANETHIOL	6.1	TF1	I	6.1+3		LQ0	P001		MP8 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
3028	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, electric storage	8	C11		8	295 598	LQ0	P801 P801a							3		VW14		CE11	80
3048	ALUMINIUM PHOSPHIDE PESTICIDE	6.1	T7	I	6.1	61 153	LQ0	P002 IBC07	B1	MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		642
3049	METAL ALKYL HALIDES, WATER-REACTIVE, N.O.S. or METAL ARYL HALIDES, WATER-REACTIVE, N.O.S.	4.2	SW	I	4.2+4.3	274 527	LQ0	P400 PR1		MP2	T21	TP2 TP7 TP9	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3050	METAL ALKYL HYDRIDES, WATER-REACTIVE, N.O.S. or METAL ARYL HYDRIDES, WATER-REACTIVE, N.O.S.	4.2	SW	I	4.2+4.3	274 527	LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3051	ALUMINIUM ALKYLS	4.2	SW	I	4.2+4.3	274	LQ0	P400 PR1		MP2	T21	TP2 TP7 TP9	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3052	ALUMINIUM ALKYL HALIDES, LIQUID	4.2	SW	I	4.2+4.3	274	LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3052	ALUMINIUM ALKYL HALIDES, SOLID	4.2	SW	I	4.2+4.3	274	LQ0	P404		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3053	MAGNESIUM ALKYLS	4.2	SW	I	4.2+4.3	274	LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3054	CYCLOHEXYL MERCAPTAN	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
3055	2-(2-AMINO-ETHOXY)ETHANOL	8	C7	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BN		3				CE8	80
3056	n-HEPTALDEHYDE	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30
3057	TRIFLUOROACETYL CHLORIDE	2	2TC		2.3+8 (+13)		LQ0	P200		MP9	T50	TP21	PxBH(M)	TE1 TM6	1			CW9 CW10		268
3064	NITROGLYCERIN, SOLUTION IN ALCOHOL with more than 1 % but not more than 5 % nitroglycerin	3	D	II	3		LQ0	P300		MP2					2					33
3065	ALCOHOLIC BEVERAGES, with more than 70 % alcohol by volume	3	F1	II	3		LQ5	P001 IBC02 R001	PP2	MP19	T4	TP1	LGBF		2				CE7	33
3065	ALCOHOLIC BEVERAGES, with more than 24 % but not more than 70 % alcohol by volume	3	F1	III	3	144 145 247	LQ7	P001 IBC03 R001	PP2	MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3066	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound)	8	C9	II	8	163	LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80
3066	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound)	8	C9	III	8	163	LQ19	P001 IBC03 R001		MP15	T4	TP1	L4BN		3				CE8	80
3070	ETHYLENE OXIDE AND DICHLORODIFLUOROMETHANE MIXTURE with not more than 12,5 % ethylene oxide	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3071	MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	II	6.1+3	274	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3072	LIFE-SAVING APPLIANCES NOT SELF-INFLATING containing dangerous goods as equipment	9	M5		9	296 635	LQ0	P905							3	W1			CE2	90
3073	VINYLPYRIDINES, STABILIZED	6.1	TFC	II	6.1+3+8		LQ17	P001 IBC01		MP15	T7	TP2 TP13	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	638
3076	ALUMINIUM ALKYL HYDRIDES	4.2	SW	I	4.2+4.3	274	LQ0	P400 PR1		MP2	T21	TP2 TP7	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	9	M7	III	9	274	LQ27	P002 IBC08 LP02 R001	PP12	MP10			SGAV		3	W1	VW9	CW13 CW31	CE11	90
3078	CERIUM, turnings or gritty powder	4.3	W2	II	4.3	550	LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
3079	METHACRYLONITRILE, STABILIZED	3	FT1	I	3+6.1		LQ0	P001		MP7 MP17	T14	TP2 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
3080	ISOCYANATES, TOXIC, FLAMMABLE, N.O.S. or ISOCYANATE SOLUTION, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	II	6.1+3	274 551	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	M6	III	9	274	LQ28	P001 IBC03 LP01 R001		MP15	T4	TP1 TP29	LGBV		3	W1		CW13 CW31	CE8	90
3083	PERCHLORYL FLUORIDE	2	2TO		2.3+5.1 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		265
3084	CORROSIVE SOLID, OXIDIZING, N.O.S.	8	CO2	I	8+5.1	274	LQ21	P002		MP18			S10AN L10BH	TE1	1			CW24		885
3084	CORROSIVE SOLID, OXIDIZING, N.O.S.	8	CO2	II	8+5.1	274	LQ23	P002 IBC06	B2	MP10			SGAN L4BN		2			CW24	CE10	85
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	OC2	I	5.1+8	274	LQ0	P503		MP2					1			CW24		558
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	OC2	II	5.1+8	274	LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24	CE10	58
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	OC2	III	5.1+8	274	LQ12	P002 IBC08 R001	B3	MP2			SGAN	TU3	3			CW24	CE11	58
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	TO2	I	6.1+5.1	274	LQ0	P002		MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		665
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	TO2	II	6.1+5.1	274	LQ18	P002 IBC06	B2	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	65
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	OT2	I	5.1+6.1	274	LQ0	P503		MP2					1			CW24 CW28		556

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	OT2	II	5.1+6.1	274	LQ11	P002 IBC06	B2	MP2			SGAN	TU3	2			CW24 CW28	CE10	56
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	OT2	III	5.1+6.1	274	LQ12	P002 IBC08 R001	B3	MP2			SGAN	TU3	3			CW24 CW28	CE11	56
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	S2	II	4.2	274	LQ0	P410 IBC06	B2	MP14			SGAV		2	W1			CE10	40
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	S2	III	4.2	274	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAV		3	W1			CE11	40
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	F3	II	4.1	274 552	LQ8	P002 IBC08	B2 B4	MP11			SGAN		2	W1			CE10	40
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	F3	III	4.1	274 552	LQ9	P002 IBC06 R001		MP11			SGAV		3	W1	VW1		CE11	40
3090	LITHIUM BATTERIES	9	M4	II	9	188 230 287 636	LQ0	P903							2	W1			CE2	90
3091	LITHIUM BATTERIES CONTAINED IN EQUIPMENT or LITHIUM BATTERIES PACKED WITH EQUIPMENT	9	M4	II	9	188 230 636	LQ0	P903							2	W1			CE2	90
3092	1-METHOXY-2-PROPANOL	3	F1	III	3		LQ7	P001 IBC03 LP01 R001		MP19	T2	TP1	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	CO1	I	8+5.1	274	LQ20	P001		MP8 MP17			L10BH	TE1	1			CW24		885
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	CO1	II	8+5.1	274	LQ22	P001 IBC02		MP15			L4BN		2			CW24	CE6	85
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	CW1	I	8+4.3	222 274	LQ20	P001		MP8 MP17			L10BH	TE1	1					823
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	CW1	II	8+4.3	222 274	LQ22	P001		MP15			L4BN		2				CE6	823
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	CS2	I	8+4.2	274	LQ21	P002		MP18					1					884
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	CS2	II	8+4.2	274	LQ23	P002 IBC06	B2	MP10			SGAN		2				CE10	84
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	CW2	I	8+4.3	222 274	LQ21	P002		MP18			S10AN L10BH	TE1	1					842
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	CW2	I	8+4.3	222 274	LQ23	P002 IBC06	B2	MP10			SGAN L4BN		2				CE10	842
3097	FLAMMABLE SOLID, OXIDIZING, N.O.S.	4.1	FO	PROHIBITED																
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	OC1	I	5.1+8	274	LQ0	P502		MP2					1			CW24		558

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	OC1	II	5.1+8	274	LQ10	P504 IBC01		MP2					2			CW24	CE6	58
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	OC1	III	5.1+8	274	LQ13	P504 IBC02 R001		MP2					3			CW24	CE8	58
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	OT1	I	5.1+6.1	274	LQ0	P502		MP2					1			CW24 CW28		556
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	OT1	II	5.1+6.1	274	LQ10	P504 IBC01		MP2					2			CW24 CW28	CE6	56
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	OT1	III	5.1+6.1	274	LQ13	P504 IBC02 R001		MP2					3			CW24 CW28	CE8	56
3100	OXIDIZING SOLID, SELF-HEATING, N.O.S.	5.1	OS	PROHIBITED																
3101	ORGANIC PEROXIDE TYPE B, LIQUID	5.2	P1		5.2+1	122 181 274	LQ14	P520		MP4					1	W5 W7 W8		CW22 CW24 CW29		539
3102	ORGANIC PEROXIDE TYPE B, SOLID	5.2	P1		5.2+1	122 181 274	LQ15	P520		MP4					1	W5 W7 W8		CW22 CW24 CW29		539
3103	ORGANIC PEROXIDE TYPE C, LIQUID	5.2	P1		5.2	122 274	LQ14	P520		MP4					1	W7		CW22 CW24 CW29	CE6	539

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3104	ORGANIC PEROXIDE TYPE C, SOLID	5.2	P1		5.2	122 274	LQ15	P520		MP4					1	W7		CW22 CW24 CW29	CE10	539
3105	ORGANIC PEROXIDE TYPE D, LIQUID	5.2	P1		5.2	122 274	LQ16	P520		MP4					2	W7		CW22 CW24 CW29	CE6	539
3106	ORGANIC PEROXIDE TYPE D, SOLID	5.2	P1		5.2	122 274	LQ11	P520		MP4					2	W7		CW22 CW24 CW29	CE10	539
3107	ORGANIC PEROXIDE TYPE E, LIQUID	5.2	P1		5.2	122 274	LQ16	P520		MP4					2	W7		CW22 CW24 CW29	CE6	539
3108	ORGANIC PEROXIDE TYPE E, SOLID	5.2	P1		5.2	122 274	LQ11	P520		MP4					2	W7		CW22 CW24 CW29	CE10	539
3109	ORGANIC PEROXIDE TYPE F, LIQUID	5.2	P1		5.2	122 274	LQ16	P520 IBC520		MP4	T23		L4BN(+)	TU3 TU13 TU30 TE12 TA2 TM4	2	W7		CW22 CW24 CW29	CE6	539
3110	ORGANIC PEROXIDE TYPE F, SOLID	5.2	P1		5.2	122 274	LQ11	P520 IBC520		MP4	T23		S4AN(+)	TU3 TU13 TU30 TE12 TA2 TM4	2	W7		CW22 CW24 CW29	CE10	539

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3111	ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3112	ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3113	ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3114	ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3115	ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3116	ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3117	ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3118	ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3120	ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED	5.2	P2	PROHIBITED																
3121	OXIDIZING SOLID, WATER-REACTIVE, N.O.S.	5.1	OW	PROHIBITED																
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	TO1	I	6.1+5.1	274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		665
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	TO1	II	6.1+5.1	274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	65
3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.	6.1	TW1	I	6.1+4.3	222 274	LQ0	P099		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		623
3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.	6.1	TW1	II	6.1+4.3	222 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	623

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3124	TOXIC SOLID, SELF-HEATING, N.O.S.	6.1	TS	I	6.1+4.2	274	LQ0	P002		MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		664
3124	TOXIC SOLID, SELF-HEATING, N.O.S.	6.1	TS	II	6.1+4.2	274	LQ18	P002 IBC06	B2	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	64
3125	TOXIC SOLID, WATER-REACTIVE, N.O.S.	6.1	TW2	I	6.1+4.3	222 274	LQ0	P099		MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		642
3125	TOXIC SOLID, WATER-REACTIVE, N.O.S.	6.1	TW2	II	6.1+4.3	222 274	LQ18	P002 IBC06	B2	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	642
3126	SELF-HEATING SOLID, CORROSIVE, ORGANIC, N.O.S.	4.2	SC2	II	4.2+8	274	LQ0	P410 IBC05	B2	MP14			SGAN		2	W1			CE10	48
3126	SELF-HEATING SOLID, CORROSIVE, ORGANIC, N.O.S.	4.2	SC2	III	4.2+8	274	LQ0	P002 IBC08 R001	B3	MP14			SGAN		3	W1			CE11	48
3127	SELF-HEATING SOLID, OXIDIZING, N.O.S.	4.2	SO	PROHIBITED																
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	ST2	II	4.2+6.1	274	LQ0	P410 IBC05	B2	MP14			SGAN		2	W1		CW28	CE10	46

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	ST2	III	4.2+6.1	274	LQ0	P002 IBC08 R001	B3	MP14			SGAN		3	W1		CW28	CE11	46
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	WC1	I	4.3+8	222 274	LQ0	P402 PR1		MP2			L10DH	TU14 TE1 TM2	0	W1		CW23		X382
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	WC1	II	4.3+8	222 274	LQ10	P402 IBC01 PR1		MP15			L4DH	TU14 TE1 TM2	0	W1		CW23	CE7	382
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	WC1	III	4.3+8	222 274	LQ13	P001 IBC02 PR1 R001		MP15			L4DH	TU14 TE1 TM2	0	W1		CW23	CE8	382
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	WT1	I	4.3+6.1	222 274	LQ0	P402 PR1	PP78	MP2			L10DH	TU14 TE1 TM2	0	W1		CW23 CW28		X362
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	WT1	II	4.3+6.1	222 274	LQ10	P402 IBC01 PR1	PP78 B12	MP15			L4DH	TU14 TE1 TM2	0	W1		CW23 CW28	CE7	362
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	WT1	III	4.3+6.1	222 274	LQ13	P001 IBC02 PR1 R001		MP15			L4DH	TU14 TE1 TM2	0	W1		CW23 CW28	CE8	362
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	WC2	I	4.3+8	222 274	LQ0	P403		MP2					0	W1		CW23		X482

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	WC2	II	4.3+8	222 274	LQ11	P410 IBC06	B2	MP14			SGAN		0	W1		CW23	CE10	482
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	WC2	III	4.3+8	222 274	LQ12	P410 IBC08 R001	B4	MP14			SGAN		0	W1		CW23	CE11	482
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	WF2	PROHIBITED																
3133	WATER-REACTIVE SOLID, OXIDIZING, N.O.S.	4.3	WO	PROHIBITED																
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	WT2	I	4.3+6.1	222 274	LQ0	P403		MP2					0	W1		CW23 CW28		X462
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	WT2	II	4.3+6.1	222 274	LQ11	P410 IBC05	B2	MP14			SGAN		0	W1		CW23 CW28	CE10	462
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	WT2	III	4.3+6.1	222 274	LQ12	P410 IBC08 R001	B4	MP14			SGAN		0	W1		CW23 CW28	CE11	462
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	WS	PROHIBITED																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3136	TRIFLUOROMETHANE, REFRIGERATED LIQUID	2	3A		2.2 (+13)	593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
3137	OXIDIZING SOLID, FLAMMABLE, N.O.S.	5.1	OF	PROHIBITED																
3138	ETHYLENE, ACETYLENE AND PROPYLENE MIXTURE, REFRIGERATED LIQUID containing at least 71,5 % ethylene with not more than 22,5 % acetylene and not more than 6 % propylene	2	3F		2.1 (+13)		LQ0	P203		MP9	T75		RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
3139	OXIDIZING LIQUID, N.O.S.	5.1	O1	I	5.1	274	LQ0	P502		MP2					1			CW24		55
3139	OXIDIZING LIQUID, N.O.S.	5.1	O1	II	5.1	274	LQ10	P504 IBC02		MP2					2			CW24	CE6	50
3139	OXIDIZING LIQUID, N.O.S.	5.1	O1	III	5.1	274	LQ13	P504 IBC02 R001		MP2					3			CW24	CE8	50
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOID SALTS, LIQUID, N.O.S.	6.1	T1	I	6.1	43 274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOID SALTS, LIQUID, N.O.S.	6.1	T1	II	6.1	43 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOID SALTS, LIQUID, N.O.S.	6.1	T1	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3141	ANTIMONY COMPOUND, INORGANIC, LIQUID, N.O.S.	6.1	T4	III	6.1	45 274 512	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	T1	I	6.1	274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	T1	II	6.1	274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3142	DISINFECTANT, LIQUID, TOXIC, N.O.S.	6.1	T1	III	6.1	274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	T2	I	6.1	274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	T2	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	T2	III	6.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	T1	I	6.1	43 2744	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	T1	II	6.1	43 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	T1	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C2-C12 homologues)	8	C3	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9	L10BH	TE1	1					88
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C2-C12 homologues)	8	C3	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C2-C12 homologues)	8	C3	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	T3	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	T3	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3146	ORGANOTIN COMPOUND,	6.1	T3	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	C10	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	C10	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	C10	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	W1	I	4.3	222 274	LQ0	P402 PR1		MP2			L10DH	TU14 TE1 TM2	0	W1		CW23		X323
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	W1	II	4.3	222 274	LQ10	P402 IBC01 PR1		MP15			L4DH	TU14 TE1 TM2	0	W1		CW23	CE7	323
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	W1	III	4.3	222 274	LQ13	P001 IBC02 PR1 R001		MP15			L4DH	TU14 TE1 TM2	0	W1		CW23	CE8	323
3149	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE with acid(s), water and not more than 5 % peroxyacetic acid, STABILIZED	5.1	OC1	II	5.1+8	196 553	LQ10	P504 IBC02	B5	MP15	T7	TP2 TP6 TP24	L4BV(+)	TU3 TC2 TE8 TE11 TT1	2			CW24	CE6	58
3150	DEVICES, SMALL, HYDROCARBON GAS POWERED or HYDROCARBON GAS REFILLS FOR SMALL DEVICES with release device	2	6F		2.1		LQ0	P206		MP9					2			CW9	CE2	23
3151	POLYHALOGENATED BIPHENYLS, LIQUID or POLYHALOGENATED TERPHENYLS, LIQUID	9	M2	II	9	203 595	LQ29	P906 IBC02		MP15			L4BH	TU15 TE1	0	W1		CW13 CW28 CW31	CE5	90

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3152	POLYHALOGENATED BIPHENYLS, SOLID or POLYHALOGENATED TERPHENYLS, SOLID	9	M2	II	9	203 595	LQ29	P906 IBC08	B2 B4	MP10			S4AH L4BH	TU15 TE1	0	W1		CW13 CW28 CW31	CE9	90
3153	PERFLUORO(METHYL VINYL ETHER)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
3154	PERFLUORO(ETHYL VINYL ETHER)	2	2F		2.1 (+13)		LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
3155	PENTACHLOROPHENOL	6.1	T2	II	6.1	43	LQ18	P002 IBC08	B2 B4	MP10			SGAH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3156	COMPRESSED GAS, OXIDIZING, N.O.S.	2	1O		2.2+5.1 (+13)	274	LQ0	P200		MP9			CxBN(M)		3			CW9 CW10	CE3	25
3157	LIQUEFIED GAS, OXIDIZING, N.O.S.	2	2O		2.2+5.1 (+13)	274	LQ0	P200		MP9			PxBN(M)	TM6	3			CW9 CW10	CE3	25
3158	GAS, REFRIGERATED LIQUID, N.O.S.	2	3A		2.2 (+13)	274 593	LQ1	P203		MP9	T75		RxBN	TU19 TM6	3	W5		CW9 CW11 CW30	CE2	22
3159	1,1,1,2-TETRAFLUORO-ETHANE (REFRIGERANT GAS R 134a)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	2	2TF		2.3+2.1 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		263
3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.	2	2F		2.1 (+13)	274	LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3162	LIQUEFIED GAS, TOXIC, N.O.S.	2	2T		2.3 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		26
3163	LIQUEFIED GAS, N.O.S.	2	2A		2.2 (+13)	274	LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3164	ARTICLES, PRESSURIZED, PNEUMATIC or HYDRAULIC (containing non-flammable gas)	2	6A		2.2	283 594	LQ0	P003		MP9					3			CW9	CE2	20
3165	AIRCRAFT HYDRAULIC POWER UNIT FUEL TANK (containing a mixture of anhydrous hydrazine and methylhydrazine) (M86 fuel)	3	FTC	I	3+6.1+8		LQ0	P301		MP7					1			CW13 CW28		336
3166	Engines, internal combustion, including when fitted in machinery or vehicles	9	M11	EXEMPT																
3167	GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, N.O.S., not refrigerated liquid	2	7F		2.1	274	LQ0	P201		MP9					2			CW9	CE2	23
3168	GAS SAMPLE, NON-PRESSURIZED, TOXIC, FLAMMABLE, N.O.S., not refrigerated liquid	2	7TF		2.3+2.1	274	LQ0	P201		MP9					1			CW9		263

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3169	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S., not refrigerated liquid	2	7T		2.3	274	LQ0	P201		MP9					1			CW9		26
3170	ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	W2	II	4.3	244	LQ11	P410 IBC07	B2	MP14			SGAN		2	W1	VW6	CW23	CE10	423
3170	ALUMINIUM SMELTING BY- PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	W2	III	4.3	244	LQ12	P002 IBC08 R001	B4	MP14			SGAN		3	W1	VW5 VW7	CW23	CE11	423
3171	Battery-powered vehicle or Battery-powered equipment	9	M11	EXEMPT																
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	T1	I	6.1	210 274	LQ0	P001		MP8 MP17			L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	T1	II	6.1	210 274	LQ17	P001 IBC02		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	T1	III	6.1	210 274	LQ19	P001 IBC03 LP01 R001		MP15			L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	T2	I	6.1	210 274	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU15 TE1 TE15	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	T2	II	6.1	210 274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	T2	III	6.1	210 274	LQ9	P002 IBC08 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3174	TITANIUM DISULPHIDE	4.2	S4	III	4.2		LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
3175	SOLIDS or mixture of solids such as preparations and wastes CONTAINING FLAMMABLE LIQUID N.O.S. having a flash-point up to 61 °C	4.1	F1	II	4.1	216 274	LQ8	P002 IBC06 R001	PP9 B2	MP11					2	W1	VW3		CE11	40
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	F2	II	4.1	274	LQ0				T3	TP3 TP9 TP26	LGBV	TU27 TE4 TE6	0					44
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	F2	III	4.1	274	LQ0				T3	TP3 TP9 TP26	LGBV	TU27 TE4 TE6	0					44
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	F3	II	4.1	274	LQ8	P002 IBC08	B2 B4	MP11			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	F3	III	4.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	FT2	II	4.1+6.1	274	LQ0	P002 IBC06	B2	MP10			SGAN		2	W1		CW28	CE10	46
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	FT2	III	4.1+6.1	274	LQ0	P002 IBC06 R001		MP10			SGAN		3	W1		CW28	CE11	46
3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S.	4.1	FC2	II	4.1+8	274	LQ0	P002 IBC06	B2	MP10			SGAN		2	W1			CE10	48
3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S.	4.1	FC2	III	4.1+8	274	LQ0	P002 IBC06 R001		MP10			SGAN		3	W1			CE11	48
3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N.O.S.	4.1	F3	II	4.1	274	LQ8	P002 IBC08	B2 B4	MP11			SGAN		2	W1			CE10	40
3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N.O.S.	4.1	F3	III	4.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP11			SGAV		3	W1	VW1		CE11	40
3182	METAL HYDRIDES, FLAMMABLE, N.O.S.	4.1	F3	II	4.1	274 554	LQ8	P410 IBC04	PP40	MP11			SGAN		2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3182	METAL HYDRIDES, FLAMMABLE, N.O.S.	4.1	F3	III	4.1	274 554	LQ9	P002 IBC04 R001		MP11			SGAV		3	W1	VW1		CE11	40
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	S1	II	4.2	274	LQ0	P001 IBC02		MP15			L4DH	TU14 TE1	2	W1			CE7	30
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	S1	III	4.2	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1			CE8	30
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	ST1	II	4.2+6.1	274	LQ0	P402 IBC02		MP15			L4DH	TU14 TE1	2	W1		CW28	CE7	36
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	ST1	III	4.2+6.1	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1		CW28	CE8	36
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	SC1	II	4.2+8	274	LQ0	P402 IBC02		MP15			L4DH	TU14 TE1	2	W1			CE7	38
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	SC1	III	4.2+8	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1			CE8	38
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	S3	II	4.2	274	LQ0	P001 IBC02		MP15			L4DH	TU14 TE1	2	W1			CE7	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	S3	III	4.2	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1			CE8	30
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	ST3	II	4.2+6.1	274	LQ0	P402 IBC02		MP15			L4DH	TU14 TE1	2	W1		CW28	CE7	36
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	ST3	III	4.2+6.1	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1		CW28	CE8	36
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	SC3	II	4.2+8	274	LQ0	P402 IBC02		MP15			L4DH	TU14 TE1	2	W1			CE7	38
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	SC3	III	4.2+8	274	LQ0	P001 IBC02 R001		MP15			L4DH	TU14 TE1	3	W1			CE8	38
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	S4	II	4.2	274 555	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	S4	III	4.2	274 555	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	S4	II	4.2	274	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	S4	III	4.2	274	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S.	4.2	ST4	II	4.2+6.1	274	LQ0	P410 IBC05	B2	MP14			SGAN		2	W1		CW28	CE10	46
3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S.	4.2	ST4	III	4.2+6.1	274	LQ0	P002 IBC08 R001	B3	MP14			SGAN		3	W1		CW28	CE11	46
3192	SELF-HEATING SOLID, CORROSIVE, INORGANIC, N.O.S.	4.2	SC4	II	4.2+8	274	LQ0	P410 IBC05	B2	MP14			SGAN		2	W1			CE10	48
3192	SELF-HEATING SOLID, CORROSIVE, INORGANIC, N.O.S.	4.2	SC4	III	4.2+8	274	LQ0	P002 IBC08 R001	B3	MP14			SGAN		3	W1			CE11	48

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3194	PYROPHORIC LIQUID, INORGANIC, N.O.S.	4.2	S3	I	4.2	274	LQ0	P400 PR1		MP2			L21DH	TU14 TC1 TE1 TM1	0	W1				333
3200	PYROPHORIC SOLID, INORGANIC, N.O.S.	4.2	S4	I	4.2	274	LQ0	P404		MP13					0	W1				43
3203	PYROPHORIC ORGANO-METALLIC COMPOUND, WATER-REACTIVE, N.O.S., liquid	4.2	SW	I	4.2+4.3	274 527	LQ0	P400 PR1		MP2	T21	TP2 TP7 TP9	L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3203	PYROPHORIC ORGANO-METALLIC COMPOUND, WATER-REACTIVE, N.O.S., solid	4.2	SW	I	4.2+4.3	274 527	LQ0	P404 PR1		MP2			L21DH	TU4 TU14 TU22 TC1 TE1 TM1	0	W1				X333
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.	4.2	S4	II	4.2	183 274	LQ0	P410 IBC06	B2	MP14			SGAN		2	W1			CE10	40
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.	4.2	S4	III	4.2	183 274	LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAN		3	W1			CE11	40
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	SC4	II	4.2+8	182 274	LQ0	P410 IBC05	B2	MP14			SGAN		2	W1			CE10	48

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	SC4	III	4.2+8	182 274	LQ0	P002 IBC08 R001	B3	MP14			SGAN		3	W1			CE11	48
3207	ORGANOMETALLIC COMPOUND or ORGANOMETALLIC COMPOUND SOLUTION or ORGANOMETALLIC COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.	4.3	WF1	I	4.3+3	222 274 556	LQ0	P402 IBC99 PR1		MP2	T13	TP2 TP7 TP9	L10DH	TU4 TU14 TU22 TE1 TM2	0	W1		CW23		X323
3207	ORGANOMETALLIC COMPOUND or ORGANOMETALLIC COMPOUND SOLUTION or ORGANOMETALLIC COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.	4.3	WF1	II	4.3+3	222 274 556	LQ10	P001 IBC01 PR1	B2	MP15	T7	TP2 TP7	L4DH	TU4 TU14 TU22 TE1 TM2	0	W1		CW23	CE7	323
3207	ORGANOMETALLIC COMPOUND or ORGANOMETALLIC COMPOUND SOLUTION or ORGANOMETALLIC COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.	4.3	WF1	III	4.3+3	222 274 556	LQ13	P001 IBC02 PR1 R001	B4	MP15	T7	TP2 TP7	L4DH	TU14 TE1 TM2	0	W1		CW23	CE8	323

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	W2	I	4.3	222 274 557	LQ0	P403 IBC99		MP2					1	W1		CW23		X423
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	W2	II	4.3	222 274 557	LQ11	P410 IBC07	B2	MP14			SGAN		2	W1		CW23	CE10	423
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	W2	III	4.3	222 274 557	LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	WS	I	4.3+4.2	222 274 558	LQ0	P403		MP2					1	W1		CW23		X423
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	WS	II	4.3+4.2	222 274 558	LQ11	P410 IBC05	B2	MP14			SGAN		2	W1		CW23	CE10	423
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	WS	III	4.3+4.2	222 274 558	LQ12	P410 IBC08 R001	B4	MP14			SGAN		3	W1	VW5	CW23	CE11	423
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	274 605	LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2			CW24	CE6	50
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	274 605	LQ13	P504 IBC02 R001		MP2	T4	TP1	LGBV	TU3	3			CW24	CE8	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	274	LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2	W6		CW24	CE6	50
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	274	LQ13	P504 IBC02 R001		MP2	T4	TP1	LGBV	TU3	3	W6		CW24	CE8	50
3212	HYPOCHLORITES, INORGANIC, N.O.S.	5.1	O2	II	5.1	274 559	LQ11	P002 IBC08	B2 B4	MP10			SGAN	TU3	2			CW24	CE10	50
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	274 604	LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2	W6		CW24	CE6	50
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	274 604	LQ13	P504 IBC02 R001		MP15	T4	TP1	LGBV	TU3	3			CW24	CE8	50
3214	PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	274 608	LQ10	P504 IBC02		MP2	T4	TP1	L4BN	TU3	2			CW24	CE6	50
3215	PERSULPHATES, INORGANIC, N.O.S.	5.1	O2	III	5.1	274	LQ12	P002 IBC08 LP02 R001	B3	MP10			SGAV	TU3	3		VW8	CW24	CE11	50
3216	PERSULPHATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	274	LQ13	P504 IBC02 R001		MP15	T4	TP1 TP29	LGBV	TU3	3			CW24	CE8	50
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	270 274 511	LQ10	P504 IBC02		MP15	T4	TP1	L4BN	TU3	2			CW24	CE6	50

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	270 274 511	LQ13	P504 IBC02 R001		MP15	T4	TP1	LGBV	TU3	3			CW24	CE8	50
3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	II	5.1	103 274	LQ10	P504 IBC01		MP15	T4	TP1	L4BN	TU3	2			CW24	CE6	50
3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	O1	III	5.1	103 274	LQ13	P504 IBC02 R001		MP15	T4	TP1	LGBV	TU3	3			CW24	CE8	50
3220	PENTAFLUOROETHANE (REFRIGERANT GAS R 125)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3221	SELF-REACTIVE LIQUID TYPE B	4.1	SR1		4.1+1	181 194 274	LQ0	P520	PP21	MP2					1	W5 W7 W8		CW22		40
3222	SELF-REACTIVE SOLID TYPE B	4.1	SR1		4.1+1	181 194 274	LQ0	P520	PP21	MP2					1	W5 W7 W8		CW22		40
3223	SELF-REACTIVE LIQUID TYPE C	4.1	SR1		4.1	194 274	LQ0	P520	PP21	MP2					1	W7		CW22	CE6	40
3224	SELF-REACTIVE SOLID TYPE C	4.1	SR1		4.1	194 274	LQ0	P520	PP21	MP2					1	W7		CW22	CE10	40
3225	SELF-REACTIVE LIQUID TYPE D	4.1	SR1		4.1	194 274	LQ0	P520		MP2					2	W7		CW22	CE6	40
3226	SELF-REACTIVE SOLID TYPE D	4.1	SR1		4.1	194 274	LQ0	P520		MP2					2	W7		CW22	CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3227	SELF-REACTIVE LIQUID TYPE E	4.1	SR1		4.1	194 274	LQ0	P520		MP2					2	W7		CW22	CE6	40
3228	SELF-REACTIVE SOLID TYPE E	4.1	SR1		4.1	194 274	LQ0	P520		MP2					2	W7		CW22	CE10	40
3229	SELF-REACTIVE LIQUID TYPE F	4.1	SR1		4.1	194 274	LQ0	P520 IBC99		MP2	T23				2	W7		CW22	CE6	40
3230	SELF-REACTIVE SOLID TYPE F	4.1	SR1		4.1	194 274	LQ0	P520 IBC99		MP2	T23				2	W7		CW22	CE10	40
3231	SELF-REACTIVE LIQUID TYPE B, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3232	SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3233	SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3234	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3235	SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3236	SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3237	SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3238	SELF-REACTIVE SOLID TYPE E, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3239	SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED	4.1	SR2	PROHIBITED																
3241	2-BROMO-2-NITROPROPANE-1,3-DIOL	4.1	SR1	III	4.1	638	LQ0	P520 IBC08	PP22 B3	MP2					3	W1			CE11	40
3242	AZODICARBONAMIDE	4.1	SR1	II	4.1	215 638	LQ0	P409		MP2					2	W1			CE10	40

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3243	SOLIDS CONTAINING TOXIC LIQUID, N.O.S.	6.1	T9	II	6.1	217 274	LQ18	P002 IBC02	PP9	MP15			SGAH	TU15 TE1 TE15	2		VW10	CW13 CW28 CW31	CE5	60
3244	SOLIDS CONTAINING CORROSIVE LIQUID, N.O.S.	8	C10	II	8	218 274	LQ23	P002 IBC05	PP9	MP10			SGAV		2		VW9 VW10		CE10	80
3245	GENETICALLY MODIFIED MICRO-ORGANISMS	9	M8		9	219 634 637	LQ0	P904 IBC08		MP6					2	W1		CW13 CW17 CW18 CW26 CW28 CW31		90
3246	METHANESULPHONYL CHLORIDE	6.1	TC1	I	6.1+8		LQ0	P001		MP8 MP17	T14	TP2 TP12 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
3247	SODIUM PEROXOBORATE, ANHYDROUS	5.1	O2	II	5.1		LQ11	P002 IBC08	B4	MP2			SGAN	TU3	2			CW24	CE10	50
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	220 221 274 601	LQ0	P001	PP6	MP19			L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1	220 221 274 601	LQ7	P001 R001	PP6	MP19			L4BH	TU15 TE1 TE15	3			CW13 CW28	CE4	36
3249	MEDICINE, SOLID, TOXIC, N.O.S.	6.1	T2	II	6.1	221 274 601	LQ18	P002	PP6	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3249	MEDICINE, SOLID, TOXIC, N.O.S.	6.1	T2	III	6.1	221 274 601	LQ9	P002 LP02 R001	PP6	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3250	CHLOROACETIC ACID, MOLTEN	6.1	TC1	II	6.1+8		LQ0				T7	TP3	L4BH	TU15 TC4 TE1 TE15	2			CW13 CW28 CW31		68
3251	ISOSORBIDE-5-MONONITRATE	4.1	SR1	III	4.1	226 638	LQ0	P409		MP2					3	W1			CE11	40
3252	DIFLUOROMETHANE (REFRIGERANT GAS R 32)	2	2F		2.1 (+13)		LQ0	P200		MP9	T50		PxBN(M)	TM6	2			CW9 CW10	CE3	23
3253	DISODIUM TRIOXOSILICATE	8	C6	III	8		LQ24	P002 IBC08 LP0 R00	B3	MP10			SGAV		3		VW9		CE11	80
3254	TRIBUTYLPHOSPHANE	4.2	S1	I	4.2		LQ0	P400 PR1		MP2					0	W1				333
3255	tert-BUTYL HYPOCHLORITE	4.2	SC1	PROHIBITED																
3256	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. with flash-point above 61 °C, at or above its flash-point	3	F2	III	3	274 560	LQ0	P099 IBC99		MP2	T3	TP3 TP29	LGAV	TU35 TE2	3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3257	ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100 °C and below its flash-point (including molten metals, molten salts, etc.)	9	M9	III	9	274 580 643	LQ0	P099 IBC99			T3	TP3 TP29	LGAV	TU35 TC7 TE2 TE14 TE18	3		VW12	CW17 CW31		99
3258	ELEVATED TEMPERATURE SOLID, N.O.S., at or above 240 °C	9	M10	III	9	274 580 643	LQ0	P099 IBC99							3	W1	VW13	CW31		99
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	C8	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	C8	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	C8	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	C2	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN		1					88

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	C2	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN		2				CE10	80
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	C2	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV		3		VW9		CE11	80
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	C4	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	C4	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8	C4	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	C6	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	C6	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8	C6	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	C8	I	8	274	LQ21	P002 IBC07	B1	MP18			S10AN L10BH	TE1	1					88
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	C8	II	8	274	LQ23	P002 IBC08	B2 B4	MP10			SGAN L4BN		2				CE10	80
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	C8	III	8	274	LQ24	P002 IBC08 LP02 R001	B3	MP10			SGAV L4BN		3		VW9		CE11	80
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	C1	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	C1	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	C1	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	C3	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	C3	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	C3	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	C5	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	C5	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	C5	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	C7	I	8	274	LQ20	P001		MP8 MP17	T14	TP2 TP9 TP27	L10BH	TE1	1					88
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	C7	II	8	274	LQ22	P001 IBC02		MP15	T11	TP2 TP27	L4BN		2				CE6	80
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	C7	III	8	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BN		3				CE8	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3268	AIR BAG INFLATORS, pyrotechnic or AIR BAG MODULES, pyrotechnic or SEAT-BELT PRETEN-SIONERS, pyrotechnic	9	M5	III	9	235 289	LQ0	P902							4	W1			CE2	90
3269	POLYESTER RESIN KIT	3	F1	II	3	236	LQ6	P302 R001							2				CE7	33
3269	POLYESTER RESIN KIT (viscous according to 2.2.3.1.4)	3	F1	III	3	236	LQ7	P302 R001							3				CE4	30
3269	POLYESTER RESIN KIT	3	F1	III	3	236	LQ7	P302 R001							3				CE4	33
3270	NITROCELLULOSE MEM-BRANE FILTERS, with not more than 12,6 % nitrogen, by dry mass	4.1	F1	II	4.1	237 286	LQ8	P411		MP11					2	W1			CE10	40
3271	ETHERS, N.O.S.	3	F1	II	3	274	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
3271	ETHERS, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3272	ESTERS, N.O.S.	3	F1	II	3	274	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33
3272	ESTERS, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	FT1	I	3+6.1	274	LQ0	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1	274	LQ0	P001 IBC02		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
3274	ALCOHOLATES SOLUTION, N.O.S., in alcohol	3	FC	II	3+8	274	LQ4	P001 IBC02		MP19			L4BH	TE1 TE15	2				CE7	338
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	I	6.1+3	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	II	6.1+3	274	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
3276	NITRILES, TOXIC, N.O.S.	6.1	T1	I	6.1	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3276	NITRILES, TOXIC, N.O.S.	6.1	T1	II	6.1	274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3276	NITRILES, TOXIC, N.O.S.	6.1	T1	III	6.1	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3277	CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S.	6.1	TC1	II	6.1+8	274 561	LQ17	P001 IBC02		MP15	T8	TP2 TP13 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	68
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., liquid	6.1	T1	I	6.1	43 274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., liquid	6.1	T1	II	6.1	43 274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., liquid	6.1	T1	III	6.1	43 274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., solid	6.1	T2	I	6.1	43 274	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., solid	6.1	T2	II	6.1	43 274	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC, N.O.S., solid	6.1	T2	III	6.1	43 274	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	I	6.1+3	43 274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		663
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.	6.1	TF1	II	6.1+3	43 274	LQ17	P001		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	63
3280	ORGANOARSENIC COMPOUND, N.O.S., liquid	6.1	T3	I	6.1	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3280	ORGANOARSENIC COMPOUND, N.O.S., liquid	6.1	T3	II	6.1	274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3280	ORGANOARSENIC COMPOUND, N.O.S., liquid	6.1	T3	III	6.1	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE11	60
3280	ORGANOARSENIC COMPOUND, N.O.S., solid	6.1	T3	I	6.1	274	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3280	ORGANOARSENIC COMPOUND, N.O.S., solid	6.1	T3	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3280	ORGANOARSENIC COMPOUND, N.O.S., solid	6.1	T3	III	6.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3281	METAL CARBONYLS, N.O.S., liquid	6.1	T3	I	6.1	274 562	LQ0	P601		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3281	METAL CARBONYLS, N.O.S., liquid	6.1	T3	II	6.1	274 562	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3281	METAL CARBONYLS, N.O.S., liquid	6.1	T3	III	6.1	274 562	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3281	METAL CARBONYLS, N.O.S., solid	6.1	T3	I	6.1	274 562	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3281	METAL CARBONYLS, N.O.S., solid	6.1	T3	II	6.1	274 562	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3281	METAL CARBONYLS, N.O.S., solid	6.1	T3	III	6.1	274 562	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., liquid	6.1	T3	I	6.1	274 562	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., liquid	6.1	T3	II	6.1	274 562	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., liquid	6.1	T3	III	6.1	274 562	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., solid	6.1	T3	I	6.1	274 562	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., solid	6.1	T3	II	6.1	274 562	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S., solid	6.1	T3	III	6.1	274 562	LQ9	P002 IBC08 LP02 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3283	SELENIUM COMPOUND, N.O.S.	6.1	T5	I	6.1	274 563	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3283	SELENIUM COMPOUND, N.O.S.	6.1	T5	II	6.1	274 563	LQ18	P002 IBC07		MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3283	SELENIUM COMPOUND, N.O.S.	6.1	T5	III	6.1	274 563	LQ9	P002 IBC07 R001		MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3284	TELLURIUM COMPOUND, N.O.S.	6.1	T5	I	6.1	274	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3284	TELLURIUM COMPOUND, N.O.S.	6.1	T5	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3284	TELLURIUM COMPOUND, N.O.S.	6.1	T5	III	6.1	274	LQ9	P002 IBC08 R001	B3	MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3285	VANADIUM COMPOUND, N.O.S.	6.1	T5	I	6.1	274 564	LQ0	P002 IBC07	B1	MP18	T14	TP2 TP9 TP27	S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3285	VANADIUM COMPOUND, N.O.S.	6.1	T5	II	6.1	274 564	LQ18	P002 IBC08	B2 B4	MP10	T11	TP2 TP27	SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60
3285	VANADIUM COMPOUND, N.O.S.	6.1	T5	III	6.1	274 564	LQ9	P002 IBC08 R001		MP10	T7	TP1 TP28	SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	FTC	I	3+6.1+8	274	LQ0	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		368
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	FTC	II	3+6.1+8	274	LQ0	P001 IBC02		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	368
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	T4	I	6.1	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	T4	II	6.1	274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	T4	III	6.1	274	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP1 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	T5	I	6.1	274	LQ0	P002 IBC05		MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		66
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	T5	II	6.1	274	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3288	TOXIC SOLID, INORGANIC, N.O.S.	6.1	T5	III	6.1	274	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11	60
3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	6.1	TC3	I	6.1+8	274	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31		668
3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	6.1	TC3	II	6.1+8	274	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	TC4	I	6.1+8	274	LQ0	P002 IBC05		MP18			S10AH	TU15 TE1	1			CW13 CW28 CW31		668
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	TC4	II	6.1+8	274	LQ18	P002 IBC06	B2	MP15			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	68
3291	CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.	6.2	I3	II	6.2	565 634	LQ0	P621 IBC620 LP621		MP6					2	W9	VW11	CW13 CW18 CW28	CE14	606
3292	BATTERIES, CONTAINING SODIUM, or CELLS, CONTAINING SODIUM	4.3	W3	II	4.3	239 295	LQ0	P408							2	W1		CW23	CE2	423

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3293	HYDRAZINE, AQUEOUS SOLUTION with not more than 37 % hydrazine, by mass	6.1	T4	III	6.1	566	LQ19	P001 IBC03 LP01 R001		MP15	T4	TP1	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8	60
3294	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with not more than 45 % hydrogen cyanide	6.1	TF1	I	6.1+3	610	LQ0	P601 PR3		MP8 MP17	T14	TP2 TP13	L15DH(+)	TU14 TU15 TE1	0			CW13 CW28 CW31		663
3295	HYDROCARBONS, LIQUID, N.O.S. (vapour pressure at 50 °C more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP9	L4BN		1					33
3295	HYDROCARBONS, LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	I	3	274 640	LQ3	P001		MP7 MP17	T11	TP1 TP8 TP9	L1,5BN		1					33
3295	HYDROCARBONS, LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
3295	HYDROCARBONS, LIQUID, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3295	HYDROCARBONS, LIQUID, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
3296	HEPTAFLUOROPROPANE (REFRIGERANT GAS R 227)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3297	ETHYLENE OXIDE AND CHLOROTETRAFLUORO-ETHANE MIXTURE with not more than 8,8 % ethylene oxide	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3298	ETHYLENE OXIDE AND PENTAFLUOROETHANE MIXTURE with not more than 7,9 % ethylene oxide	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3299	ETHYLENE OXIDE AND TETRAFLUOROETHANE MIXTURE with not more than 5,6 % ethylene oxide	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3300	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 87 % ethylene oxide	2	2TF		2.3+2.1 (+13)		LQ0	P200		MP9			PxBH(M)	TE1 TM6	1			CW9 CW10		263

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3301	CORROSIVE LIQUID, SELF-HEATING, N.O.S.	8	CS1	I	8+4.2	274	LQ20	P001		MP8 MP17			L10BH	TE1	1					884
3301	CORROSIVE LIQUID, SELF-HEATING, N.O.S.	8	CS1	II	8+4.2	274	LQ22	P001		MP15			L4BN		2				CE6	84
3302	2-DIMETHYLAMINOETHYL ACRYLATE	6.1	T1	II	6.1		LQ17	P001 IBC02		MP15	T7	TP2	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5	60
3303	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	2	1TO		2.3+5.1 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		265
3304	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	2	1TC		2.3+8 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		268
3305	COMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2	1TFC		2.3+2.1 +8 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		263
3306	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2	1TOC		2.3+5.1 +8 (+13)	274	LQ0	P200		MP9			CxBH(M)	TU6 TE1	1			CW9 CW10		265
3307	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	2	2TO		2.3+5.1 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		265
3308	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	2	2TC		2.3+8 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		268

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3309	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2	2TFC		2.3+2.1 +8 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		263
3310	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2	2TOC		2.3+5.1 +8 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		265
3311	GAS, REFRIGERATED LIQUID, OXIDIZING, N.O.S.	2	3O		2.2+5.1 (+13)	274	LQ0	P203		MP9	T75	TP22	RxBN	TU7 TU19 TM6	3	W5		CW9 CW11 CW30	CE2	225
3312	GAS, REFRIGERATED LIQUID, FLAMMABLE, N.O.S.	2	3F		2.1 (+13)	274	LQ0	P203		MP9	T75		RxBN	TU18 TM6	2	W5		CW9 CW11 CW30	CE2	223
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	S2	II	4.2		LQ0	P002 IBC08	B2	MP14			SGAV		2	W1			CE10	40
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	S2	III	4.2		LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAV		3	W1			CE11	40
3314	PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form evolving flammable vapour	9	M3	III	GEEN	207 633	LQ27	P002 IBC08 R001	PP14 B6	MP10					3	W1	VW3	CW31	CE11	90
3315	CHEMICAL SAMPLE, TOXIC, liquid or solid	6.1	T8	I	6.1	250	LQ0	P099		MP8 MP17					1			CW13 CW28 CW31		66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3316	CHEMICAL KIT or FIRST AID KIT	9	M11	II	9	251	LQ0	P901							2	W1				90
3316	CHEMICAL KIT or FIRST AID KIT	9	M11	III	9	251	LQ0	P901							3	W1				90
3317	2-AMINO-4,6-DINITROPHENOL, WETTED with not less than 20 % water, by mass	4.1	D	I	4.1		LQ0	P406	PP26	MP2					1	W1				40
3318	AMMONIA SOLUTION, relative density less than 0,80 at 15 °C in water, with more than 50 % ammonia	2	4TC		2.3+8 (+13)	23	LQ0	P200		MP9	T50		PxBH(M)	TE1	1			CW9 CW10		268
3319	NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2 % but not more than 10 % nitroglycerin, by mass	4.1	D	II	4.1	272 274	LQ0	P099 IBC99		MP2					2	W1			CE10	40
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION, with not more than 12 % sodium borohydride and not more than 40 % sodium hydroxide by mass	8	C5	II	8		LQ22	P001 IBC02		MP15	T7	TP2	L4BN		2				CE6	80

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION, with not more than 12 % sodium borohydride and not more than 40 % sodium hydroxide by mass	8	C5	III	8		LQ19	P001 IBC03 LP01 R001		MP15	T4	TP2	L4BN		3				CE8	80
3321	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non fissile or fissile-excepted	7			7X	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3		T5	TP4	L2,65 CN(+) S2,65 AN(+)	TU36 TT7 TM7	0			CW33	CE15	70
3322	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), non fissile or fissile-excepted	7			7X	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3		T5	TP4	L2,65 CN(+) S2,65 AN(+)	TU36 TT7 TM7	0			CW33	CE15	70
3323	RADIOACTIVE MATERIAL, TYPE C PACKAGE, non fissile or fissile-excepted	7			7X	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3324	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3325	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, (LSA-III), FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging			Portable tanks		RID tanks		Transport Category	Special transport provisions			Colis Express	Hazard Identification Number
								Instructions	Special Provisions	Mixed Packing	Tank Instructions	Special Provisions	Tank Code	Special Provisions		Packages	Bulk	Loading, unloading & handling		
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3326	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3327	RADIOACTIVE MATERIAL, TYPE A PACKAGE, FISSILE, non-special form	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3328	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3329	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3330	RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3331	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non fissile or fissile-excepted	7			7X	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE	7			7X+7E	172	LQ0	see 2.2.7 and 4.1.9	see 4.1.9.1.3						0			CW33	CE15	70
3334	Aviation regulated liquid, n.o.s.	9	M11	EXEMPT																
3335	Aviation regulated solid, n.o.s.	9	M11	EXEMPT																
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	F1	I	3	274	LQ3	P001		MP7 MP17	T11	TP2	L1,5BN		1					33
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S. (vapour pressure at 50 °C more than 110 kPa but not more than 175 kPa)	3	F1	II	3	274 640	LQ4	P001		MP19	T7	TP1 TP8 TP28	L1,5BN		2				CE7	33
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S. (vapour pressure at 50 °C not more than 110 kPa)	3	F1	II	3	274 640	LQ4	P001 IBC02 R001		MP19	T7	TP1 TP8 TP28	LGBF		2				CE7	33

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	F1	III	3	274	LQ7	P001 IBC03 LP01 R001		MP19	T4	TP1 TP29	LGBF		3				CE4	30
3337	REFRIGERANT GAS R 404A (Pentafluoroethane, 1,1,1-trifluoroethane, and 1,1,1,2-tetrafluoroethane zeotropic mixture with approximately 44 % pentafluoroethane and 52 % 1,1,1-trifluoroethane)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3338	REFRIGERANT GAS R 407A (Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane zeotropic mixture with approximately 20 % difluoromethane and 40 % pentafluoroethane)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3339	REFRIGERANT GAS R 407B (Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane zeotropic mixture with approximately 10 % difluoromethane and 70 % pentafluoroethane)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20
3340	REFRIGERANT GAS R 407C (Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane zeotropic mixture with approximately 23 % difluoromethane and 25 % pentafluoroethane)	2	2A		2.2 (+13)		LQ1	P200		MP9	T50		PxBN(M)	TM6	3			CW9 CW10	CE3	20

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3341	THIOUREA DIOXIDE	4.2	S2	II	4.2		LQ0	P002 IBC06	B2	MP14			SGAV		2	W1			CE10	40
3341	THIOUREA DIOXIDE	4.2	S2	III	4.2		LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAV		3	W1			CE11	40
3342	XANTHATES	4.2	S2	II	4.2		LQ0	P002 IBC06	B2	MP14			SGAV		2	W1			CE10	40
3342	XANTHATES	4.2	S2	III	4.2		LQ0	P002 IBC08 LP02 R001	B3	MP14			SGAV		3	W1			CE11	40
3343	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30 % nitroglycerin, by mass	3	D		3	274 278	LQ0	P099		MP2					0					30/ 33
3344	PENTAERYTHRITE TETRANITRATE MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10 % but not more than 20 % PETN, by mass	4.1	D	II	4.1	272 274	LQ0	P099		MP2					2	W1			CE10	44
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28	CE7	336
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	T7	I	6.1	61	LQ0	P002 IBC07	B1	MP18			S10AH L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	T7	II	6.1	61	LQ18	P002 IBC08	B2 B4	MP10			SGAH L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE9 CE12	60
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	T7	III	6.1	61	LQ9	P002 IBC08 LP02 R001	B3	MP10			SGAH L4BH	TU15 TE1 TE15	2		VW9	CW13 CW28 CW31	CE11 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	I	3+6.1	61	LQ3	P001		MP7 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28		336
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash-point less than 23 °C	3	FT2	II	3+6.1	61	LQ4	P001 IBC02 R001		MP19	T11	TP2 TP13 TP27	L4BH	TU15 TE1	2			CW13 CW28	CE7	336
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	I	6.1+3	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	663
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	II	6.1+3	61	LQ17	P001 IBC02		MP15	T11	TP2 TP13 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	63
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash-point not less than 23 °C	6.1	TF2	III	6.1+3	61	LQ19	P001 IBC03 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	63
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	T6	I	6.1	61	LQ0	P001		MP8 MP17	T14	TP2 TP9 TP13 TP27	L10CH	TU14 TU15 TE1	1			CW13 CW28 CW31	CE12	66
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	T6	II	6.1	61	LQ17	P001 IBC02		MP15	T11	TP2 TP27	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE5 CE12	60

UN Number	Name and description	Class	Classification Code	Packing Group	Labels	Special Provisions	Limited Quantities	Packaging: Instructions	Packaging: Special Provisions	Packaging: Mixed Packing	Portable tanks: Tank Instructions	Portable tanks: Special Provisions	RID tanks: Tank Code	RID tanks: Special Provisions	Transport Category	Special transport provisions: Packages	Special transport provisions: Bulk	Special transport provisions: Loading, unloading & handling	Colis Express	Hazard Identification Number
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4.6	4.1.4	4.1.4	4.1.10	4.2.4.2	4.2.4.3	4.3	4.3.5/ 6.8.4	1.1.3.1(c)	7.2.4	7.3.3	7.5.11	7.6	5.3.2.3
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(15)	(16)	(17)	(18)	(19)	(20)
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	T6	III	6.1	61	LQ19	P001 IBC03 LP01 R001		MP15	T7	TP2 TP28	L4BH	TU15 TE1 TE15	2			CW13 CW28 CW31	CE8 CE12	60
3353	AIR BAG INFLATORS, COMPRESSED GAS or AIR BAG MODULES, COMPRESSED GAS or SEAT-BELT PRETENSIONERS, COMPRESSED GAS	2	6A		2.2	280 289	LQ0	P202		MP9					3			CW9	CE2	20
3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.	2	2F		2.1 (+13)	274	LQ0	P200		MP9			PxBN(M)	TM6	2			CW9 CW10	CE3	23
3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.	2	2TF		2.3+2.1 (+13)	274	LQ0	P200		MP9			PxBH(M)	TU6 TE1 TM6	1			CW9 CW10		263
3356	OXYGEN GENERATOR, CHEMICAL	5.1	O3	II	5.1	284	LQ0	P500		MP2					2			CW24		50
3357	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, N.O.S. with not more than 30 % nitroglycerin, by mass	3	D	II	3	274 288	LQ4	P099		MP2					2				CE7	33
3358	REFRIGERATING MACHINES containing flammable, non-toxic, liquefied gas	2	6F		2.1	291	LQ0	P003	PP32	MP9					2			CW9	CE2	23

CHAPTER 3.3

Special Requirements Applicable to certain articles or substances

3.3.1. When Column 6 of table A of Chapter 3.2 indicates that a special requirement is relevant to a substance or article, the meaning and requirements of that special requirement are as set out below.

15 For small quantities of not more than 500 g per package, this substance, with not less than 10 % water, by mass, may also be classified in Class 4.1, subject to Packing Instruction P406 in 4.1.4.1.

16 Samples of new or existing explosive substances or articles may be carried as directed by the competent authorities (see 2.2.1.1.3) for purposes including: testing, classification, research and development, quality control, or as a commercial sample. Explosive samples which are not wetted or desensitized shall be limited to 10 kg in small packages as specified by the competent authorities. Explosive samples which are wetted or desensitized shall be limited to 25 kg.

18 For quantities of not more than 11,5 kg per package, this substance, with not less than 10 % water, by mass, may also be classified in Class 4.1, subject to Packing Instruction P406 in 4.1.4.1.

23 Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas.

32 This substance is not subject to the requirements of this Directive when in any other form.

36 This substance shall be classified under UN 1373 if it contains more than 5 % animal or vegetable oil.

37 This substance is not subject to the requirements of this Directive when coated.

38 This substance is not subject to the requirements of this Directive when it contains not more than 0,1 % calcium carbide.

39 This substance is not subject to the requirements of this Directive when it contains less than 30 % or not less than 90 % silicon.

43 When offered for carriage as pesticides, these substances shall be carried under the relevant pesticide entry and in accordance with the relevant pesticide requirements (see 2.2.61.1.10 to 2.2.61.1.11).

45 Antimony sulphides and oxides which contain not more than 0,5 % of arsenic calculated on the total mass are not subject to the requirements of this Directive.

47 Ferricyanides and ferrocyanides are not subject to the requirements of this Directive.

48 The carriage of this substance, when it contains more than 20 % hydrocyanic acid, is prohibited.

59 These substances are not subject to the requirements of this Directive when they contain not more than 50 % magnesium.

60 If the concentration is more than 72 %, the carriage of this substance is prohibited.

61 The technical name which shall supplement the proper shipping name shall be the ISO common name (see also ISO 1750:1981 'Pesticides and other agrochemicals – common names', as amended), other name listed in the WHO 'Recommended Classification of Pesticides by Hazard and Guidelines to Classification' or the name of the active substance (see also 3.1.2.6.1.1).

62 This substance is not subject to the requirements of this Directive when it contains not more than 4 % sodium hydroxide.

65 Hydrogen peroxide, aqueous solutions with less than 8 % hydrogen peroxide are not subject to the requirements of this Directive.

103 The carriage of ammonium nitrites and mixtures of an inorganic nitrite with an ammonium salt is prohibited.

105 Nitrocellulose meeting the descriptions of UN 2556 or UN 2557 may be classified in Class 4.1.

107 The consignment is not subject to the requirements of this Directive if the consignor declares that it has no self-heating properties.

113 The carriage of chemically unstable mixtures is prohibited.

119 Refrigerating machines include machines or other appliances which have been designed for the specific purpose of keeping food or other items at a low temperature in an internal compartment, and air conditioning units. Refrigerating machines are considered not subject to the requirements of this Directive if containing less than 12 kg of a gas of Class 2, group A or O according to 2.2.2.1.3, or if containing less than 12 l ammonia solution (UN 2672).

122 The subsidiary risks and the UN number (generic entry) for each of the currently assigned organic peroxide formulations are given in 2.2.52.4.

127 Other inert material or inert material mixture may be used, provided this inert material has identical phlegmatizing properties.

131 The phlegmatized substance shall be significantly less sensitive than dry PETN.

135 The dihydrated sodium salt of dichloroisocyanuric acid is not subject to the requirements of this Directive.

138 p-Bromobenzyl cyanide is not subject to the requirements of this Directive.

141 Substances which have undergone sufficient heat treatment so that they present no hazard during carriage are not subject to the requirements of this Directive.

142 Solvent extracted soya bean meal containing not more than 1,5 % oil and 11 % moisture, which is substantially free of flammable solvent, is not subject to the requirements of this Directive.

144 An aqueous solution containing not more than 24 % alcohol by volume is not subject to the requirements of this Directive.

145 Alcoholic beverages of Packing Group III, when carried in receptacles of 250 litres or less, are not subject to the requirements of this Directive.

152 The classification of this substance will vary with particle size and packaging, but borderlines have not been experimentally determined. Appropriate classifications shall be made in accordance with 2.2.1.

153 This entry applies only if it is demonstrated, on the basis of tests, that the substances when in contact with water are not combustible nor show a tendency to auto-ignition and that the mixture of gases evolved is not flammable.

162 Mixtures with a flash-point of not more than 61 °C shall bear a label conforming to model No 3.

163 A substance specifically listed by name in table A of Chapter 3.2 shall not be carried under this entry. Materials carried under this entry may contain 20 % or less nitrocellulose provided the nitrocellulose contains not more than 12,6 % nitrogen (by dry mass).

168 Asbestos which is immersed or fixed in a natural or artificial binder (such as cement, plastics, asphalt, resins or mineral ore) in such a way that no escape of hazardous quantities of respirable asbestos fibres can occur during carriage is not subject to the requirements of this Directive. Manufactured articles containing asbestos and not meeting this requirement are nevertheless not subject to the requirements of this Directive when packed so that no escape of hazardous quantities of respirable asbestos fibres can occur during carriage.

169 Phthalic anhydride in the solid state and tetrahydrophthalic anhydrides, with not more than 0,05 % maleic anhydride, are not subject to the requirements of this Directive. Phthalic anhydride molten at a temperature above its flash-point, with not more than 0,05 % maleic anhydride, shall be classified under UN 3256.

172 Packages containing radioactive material with a subsidiary risk shall:

(a) be labelled with a label corresponding to each subsidiary risk exhibited by the material; corresponding placards shall be affixed to wagons or large containers in accordance with the relevant requirements of 5.3.1;

(b) be allocated to Packing Groups I, II or III, as and if appropriate, by application of the grouping criteria provided in Part 2 corresponding to the nature of the predominant subsidiary risk.

The description required in 5.4.1.2.5.1 (e) shall include a description of these subsidiary risks (e.g. 'Subsidiary risk: 3, 6.1'), the name of the constituents which most predominantly contribute to this (these) subsidiary risk(s), and where applicable, the Packing Group.

177 Barium sulphate is not subject to the requirements of this Directive.

178 This designation shall be used only with the approval of the competent authority of the country of origin (see 2.2.1.1.3) and only when no other appropriate designation exists in table A of Chapter 3.2.

181 Packages containing this substance shall also bear a label conforming to Model No. 1 unless the competent authority of the country of origin has permitted this label to be dispensed with for the specific packaging employed because test data have proved that the substance in this packaging does not exhibit explosive behaviour (see 5.2.2.1.9).

182 The group of alkali metals includes lithium, sodium, potassium, rubidium and caesium.

183 The group of alkaline earth metals includes magnesium, calcium, strontium and barium.

186 In determining the ammonium nitrate content, all nitrate ions for which a molecular equivalent of ammonium ions is present in the mixture shall be calculated as ammonium nitrate.

188 Lithium cells and batteries handed over for carriage are not subject to the requirements of this Directive if they meet the following requirements:

(a) for a lithium metal or lithium alloy cell with a liquid cathode, the lithium content is not more than 0,5 g, for a lithium metal or lithium alloy cell with a solid cathode, the lithium content is not more than 1 g, and for a lithium-ion cell, the equivalent lithium content is not more than 1,5 g;

(b) for a lithium metal or lithium alloy battery with liquid cathodes, the aggregate lithium content is not more than 1 g, for a lithium metal or lithium alloy battery with solid cathodes, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the aggregate equivalent lithium content is not more than 8 g;

(c) each cell or battery containing a liquid cathode is hermetically sealed;

(d) cells are separated so as to prevent short circuits;

(e) batteries are separated so as to prevent short circuits and are packed in strong packagings, except when installed in electronic devices; and

(f) if, when fully charged, the aggregate lithium content of the anodes in a liquid cathode battery is more than 0,5 g, or of the aggregate lithium content of the anodes in a solid cathode battery is more than 1 g, it does not contain a liquid or gas which is considered dangerous unless the liquid or gas, if free, would be completely absorbed or neutralized by other materials in the battery.

Lithium cells and lithium batteries are also not subject to the requirements of this Directive if they meet the following requirements:

(g) the lithium content of the anode of each cell, when fully charged, is not more than 5 g;

(h) the aggregate lithium content of the anodes of each battery, when fully charged, is not more than 25 g;

(i) each cell or battery is of the type proved to be non-dangerous by testing in accordance with tests in the Manual of Tests and Criteria, Part III, sub-section 38,3; such testing shall be carried out on each type prior to the initial transport of that type; and

(j) cells and batteries are designed or packed in such a way as to prevent short circuits under normal conditions of transport.

As used above and elsewhere in RID, 'lithium content' means the mass of lithium in the anode of a lithium metal or lithium alloy cell, except in the case of a lithium-ion cell the 'equivalent lithium content' in grams is calculated to be 0,3 times the rated capacity in ampere-hours.

190 Aerosol dispensers shall be provided with protection against inadvertent discharge. Aerosols with a capacity not exceeding 50 ml containing only non-toxic substances are not subject to the requirements of this Directive.

191 Receptacles, small, with a capacity not exceeding 50 ml, containing only non-toxic substances are not subject to the requirements of this Directive.

194 The UN number (generic entry) for each of the currently assigned self-reactive substances is given in 2.2.41.4.

196 This formulation shall fulfil the criteria given in paragraph 20.4.2(g) of Part II of the Manual of Tests and Criteria, except that a diluent of type A is not required for desensitization. Formulations not meeting these criteria shall be carried under the requirements of Class 5.2, (see 2.2.52.4).

198 Nitrocellulose solutions containing not more than 20 % nitrocellulose may be carried as paint or printing ink, as applicable (see UN Nos. 1210, 1263 and 3066).

199 Lead compounds which, when mixed in a ratio of 1:1000 with 0,07M hydrochloric acid and stirred for one hour at a temperature of 23 °C ± 2 °C, exhibit a solubility of 5 % or less are considered insoluble. See ISO 3711:1990 'Lead chromate pigments and lead chromate — molybdate pigments — Specifications and methods of test'.

203 This entry shall not be used for polychlorinated biphenyls (UN 2315).

204 Articles containing smoke-producing substance(s) corrosive according to the criteria shall be labelled with a label conforming to Model No. 8.

205 This entry shall not be used for PENTACHLOROPHENOL (UN 3155).

207 Polymeric beads and moulding compounds may be made from polystyrene, polymethyl methacrylate or other polymeric material.

208 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10 % ammonium nitrate and at least 12 % water of crystallization, is not subject to the requirements of this Directive.

210 Toxins from plant, animal or bacterial sources which contain infectious substances, or toxins that are contained in infectious substances, are substances of Class 6.2.

215 This entry only applies to the technically pure substance or to formulations derived from it having an SADT higher than 75 °C and therefore does not apply to formulations which are self-reactive substances (for self-reactive substances, see 2.2.41.4).

216 Mixtures of solids which are not subject to the requirements of this Directive and flammable liquids may be carried under this entry without first applying the classification criteria of Class 4.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging, wagon or container is closed.

217 Mixtures of solids which are not subject to the requirements of this Directive and toxic liquids may be carried under this entry without first applying the classification criteria of Class 6.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging, wagon or container is closed. This entry shall not be used for solids containing a Packing Group I liquid.

218 Mixtures of solids which are not subject to the requirements of this Directive and corrosive liquids may be carried under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging, wagon or container is closed.

219 Genetically modified micro-organisms which are infectious shall be carried as UN 2814 or 2900.

220 Only the technical name of the flammable liquid component of this solution or mixture shall be shown in parentheses immediately following the proper shipping name.

221 Substances included under this entry shall not be of Packing Group I.

222 Where the term 'water-reactive' is used to describe a substance in RID, it means a substance which, in contact with water, emits flammable gas.

224 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance shall remain liquid during normal transport conditions. It shall not freeze at temperatures above −15 °C.

225 Fire extinguishers under this entry may include installed actuating cartridges (cartridges, power device of Division 1.4, compatibility group C or S), without changing the classification of Class 2, group A or O according to 2.2.2.1.3 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per extinguishing unit.

226 Formulations of this substance containing not less than 30 % non-volatile, non-flammable phlegmatizer are not subject to the requirements of this Directive.

227 This substance may be carried under requirements other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert substances the content of urea nitrate may not exceed 75 % by mass and the mixture shall not be capable of being detonated by the Series 1, type (a), test in the Manual of Tests and Criteria, Part 1.

228 Mixtures not meeting the criteria for flammable gases (see 2.2.2.1.5) shall be carried under UN 3163.

230 This entry applies to cells and batteries containing lithium in any form, including lithium polymer and lithium ion cells and batteries.

Lithium cells and batteries may be carried under this entry if they meet the following requirements:

(a) each cell or battery type has been determined to meet the criteria for assignment to Class 9 on the basis of tests carried out in accordance with the Manual of Tests and Criteria, Part III, sub-section 38.3;

(b) each cell and battery incorporates a protective device against excess internal pressure or is designed to preclude a violent rupture under normal conditions of transport;

(c) each cell and battery is equipped with an effective means of preventing external short circuits;

(d) each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.).

235 This entry applies to articles which may be classified in Class 1 in accordance with 2.2.1.1 which are used as air bags or seat-belts, when carried as component parts and when these articles as handed over for carriage have been tested in accordance with Test series 6(c) of Section 16 of Part I of the Manual of Tests and Criteria), with no explosion of the device, no fragmentation of device casings, and no projection hazard or thermal effect which would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity. If the air bag inflator unit satisfactorily passes the series 6(c) test, it is not necessary to repeat the test on the air bag module itself.

236 Polyester resin kits consist of two components: a base material (Class 3, Packing Group II or III) and an activator (organic peroxide). The organic peroxide shall be type D, E or F, not requiring temperature control. Packing Group shall be II or III, according to the criteria for Class 3, applied to the base material. The quantity limit referred to in Column 7 of table A of Chapter 3.2 applies to the base material.

237 The membrane filters, including paper separators, coating or backing materials, etc., that are present during carriage, shall not be liable to propagate a detonation as tested by one of the tests described in the Manual of Tests and Criteria, Part I, Test series 1(a).

In addition the competent authority may determine, on the basis of the results of suitable burning rate tests taking account of the standard tests in the Manual of Tests and Criteria, Part III, sub-section 33.2.1, that nitrocellulose membrane filters in the form in which they are to be carried are not subject to the requirements applicable to flammable solids in Class 4.1.

238 (a) Batteries can be considered as non-spillable provided that they are capable of withstanding the vibration and pressure differential tests given below, without leakage of battery fluid.

Vibration test: the battery is rigidly clamped to the platform of a vibration machine and a simple harmonic motion having an amplitude of 0,8 mm (1,6 mm maximum total excursion) is applied. The frequency is varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies and return is traversed in 95 ± 5 minutes for each mounting position (direction of vibration) of the battery. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods.

Pressure differential test: following the vibration test, the battery is stored for six hours at 24 °C ± 4 °C while subjected to a pressure differential of at least 88 kPa. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.

(b) Non-spillable batteries are not subject to the requirements of this Directive if, at a temperature of 55 °C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.

239 Batteries or cells shall not contain dangerous goods other than sodium, sulphur and/or polysulphides. Batteries or cells shall not be handed over for carriage at temperature such that liquid elemental sodium is present in the battery or cell unless approved and under the conditions established by the competent authority of the country of origin. If the country of origin is not a COTIF Member State, the approval and conditions of carriage shall be recognized by the competent authority of the first COTIF Member State reached by the consignment.

Cells shall consist of hermetically sealed metal casings which fully enclose the dangerous goods and which are so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.

Batteries shall consist of cells secured within and fully enclosed by a metal casing so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.

241 The formulation shall be prepared so that it remains homogeneous and does not separate during carriage. Formulations with low nitrocellulose contents and not showing dangerous properties when tested for their liability to detonate, deflagrate or explode when heated under defined confinement by tests of Test series 1(a), 2(b) and 2(c) respectively in the Manual of Tests and Criteria, Part I and not being a flammable solid when tested in accordance with test No. 1 in the Manual of Tests and Criteria, Part III, sub-section 33.2.1.4 (chips, if necessary, crushed and sieved to a particle size of less than 1,25 mm) are not subject to the requirements of this Directive.

242 Sulphur is not subject to the requirements of this Directive when it is carried in quantities of less than 400 kg per package, or when it has been formed to a specific shape (e.g. prills, granules, pellets, pastilles or flakes).

244 This entry includes e.g. aluminium dross, aluminium skimmings, spent cathodes, spent potliner, and aluminium salt slags.

247 Alcoholic beverages containing more than 24 % alcohol but not more than 70 % by volume, when carried as part of the manufacturing process, may be carried in wooden casks with a capacity of not more than 500 litres, by derogation from the requirements of Chapter 6.1, on the following conditions:

(a) the casks shall be checked and tightened before filling;

(b) sufficient ullage (not less than 3 %) shall be left to allow for the expansion of the liquid;

(c) the casks shall be carried with the bungholes pointing upwards;

(d) the casks shall be carried in containers meeting the requirements of the CSC, as amended. Each cask shall be secured in custom-made cradles and be wedged by appropriate means to prevent it from being displaced in any way during transport.

249 Ferrocerium, stabilized against corrosion, with a minimum iron content of 10 % is not subject to the requirements of this Directive.

250 This entry may only be used for samples of chemicals taken for analysis in connection with the implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. The carriage of substances under this entry shall be in accordance with the chain of custody and security procedures specified by the Organisation for the Prohibition of Chemical Weapons.

The chemical sample may only be carried providing prior approval has been granted by the competent authority or the Director General of the Organisation for the Prohibition of Chemical Weapons and providing the sample complies with the following requirements:

(a) it shall be packed according to Packing Instruction 623 (see table S-3-8 of the supplementary volume) in the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air; and

(b) during transport, a copy of the document of approval for transport, showing the quantity limitations and the packing requirements shall be attached to the consignment note.

251 The entry 3316 CHEMICAL KIT or FIRST AID KIT is intended to apply to boxes, cases etc. containing small quantities of various dangerous goods which are used for medical, analytical or testing purposes. Such kits may not contain dangerous goods for which the code 'LQ0' has been indicated in Column 7 of table A of Chapter 3.2.

Components of these kits shall not react dangerously (see definition of 'dangerous reaction' in 1.2.1). The total quantity of dangerous goods in any one kit shall not exceed either 1 l or 1 kg. The Packing Group assigned to the kit as a whole shall be the most stringent packing group assigned to any individual substance in the kit.

Kits which are carried on board wagons for first-aid or operating purposes are not subject to the requirements of this Directive.

252 Provided the ammonium nitrate remains in solution under all conditions of transport, aqueous solutions of ammonium nitrate, with not more than 0,2 % combustible material, in a concentration not exceeding 80 %, are not subject to the requirements of this Directive.

266 This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be carried unless specifically authorized by the competent authority (see 2.2.1.1).

267 Any explosives, blasting, type C containing chlorates shall be segregated from explosives containing ammonium nitrate or other ammonium salts.

268 The word 'AGENT' may be used instead of 'EXPLOSIVE' when approved by the competent authority (see 2.2.1.1).

270 Aqueous solutions of Class 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of Class 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80 % of the saturation limit.

271 Lactose or glucose or similar materials, may be used as a phlegmatizer provided that the substance contains not less than 90 %, by mass, of phlegmatizer. The competent authority may authorize these mixtures to be classified in Class 4.1 on the basis of a test Series 6(c) on at least three packagings as prepared for transport. Mixtures containing at least 98 %, by mass, of phlegmatizer are not subject to the requirements of this Directive. Packages containing mixtures with not less than 90 %, by mass, of phlegmatizer need not bear a label conforming to Model No. 6.1.

272 This substance shall not be carried under the requirements of Class 4.1 unless specifically authorized by the competent authority (see UN No. 0143).

273 Maneb and maneb preparations stabilized against self-heating need not be classified in Class 4.2 when it can be demonstrated by testing that a cubic volume of 1 m^3 of substance does not self-ignite and that the temperature at the centre of the sample does not exceed 200 °C, when the sample is maintained at a temperature of not less than 75 °C ± 2 °C for a period of 24 hours.

274 The requirements of 3.1.2.6.1 apply.

278 These substances shall not be classified and carried unless authorized by the competent authority on the basis of results from Series 2 tests and a Series 6(c) test of Part I of the Manual of Tests and Criteria on packages as prepared for transport (see 2.2.1.1). The competent authority shall assign the packing group on the basis of 2.2.3 criteria and the package type used for the Series 6(c) test.

279 The substance is assigned to this classification or packing group based on human experience rather than the strict application of classification criteria set out in this Directive.

280 This entry applies to articles which are used as life saving vehicle air bag inflators or air bag modules or seat-belt pretensioners, containing a gas or a mixture of compressed gases classified under Class 2, group A or O according to 2.2.2.1.3, and with or without small quantities of pyrotechnic material. For units with pyrotechnic material, initiated explosive effects shall be contained within the pressure vessel such that the unit may be excluded from Class 1 in accordance with the Note under 2.2.1.1.1(b), in conjunction with 16.6.1.4.7(a)(ii) of the Manual of Tests and Criteria, Part I. In addition, units shall be designed or packaged for transport so that when engulfed in a fire there will be no fragmentation of the pressure vessel or projection hazard. This shall be determined by analysis.

282 Suspensions with a flash-point of not more than 61 °C, shall bear a label conforming to model No. 3.

283 Articles, containing gas, intended to function as shock absorbers, including impact energy-absorbing devices, or pneumatic springs are not subject to the requirements of this Directive provided each article:

(a) has a gas space capacity not exceeding 1,6 litres and a charge pressure not exceeding 280 bar where the product of the capacity (litres) and charge pressure (bars) does not exceed 80 (i.e. 0,5 litre gas space and 160 bar charge pressure, 1 litre gas space and 80 bar charge pressure, 1,6 litre gas space and 50 bar charge pressure, 0,28 litre gas space and 280 bar charge pressure);

(b) has a minimum burst pressure of 4 times the charge pressure at 20 °C for products not exceeding 0,5 litre gas space capacity and 5 times charge pressure for products greater than 0,5 litre gas space capacity;

(c) is manufactured from material which will not fragment upon rupture;

(d) is manufactured in accordance with a quality assurance standard acceptable to the competent authority; and

(e) the design type has been subjected to a fire test demonstrating that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, such that the article will not fragment and that the article does not rocket.

See also 1.1.3.2(d) for equipment used for the operation of the vehicle.

284 An oxygen generator, chemical, containing oxidizing substances shall meet the following conditions:

(a) the generator when containing an explosive actuating device shall only be carried under this entry when excluded from Class 1 in accordance with the Note under 2.2.1.1.1(b);

(b) the generator, without its packaging, shall be capable of withstanding a 1,8 m drop test onto a rigid, non-resilient, flat and horizontal surface, in the position most likely to cause damage, without loss of its contents and without actuation;

(c) when a generator is equipped with an actuating device, it shall have at least two positive means of preventing unintentional actuation.

286 Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0,5 g, are not subject to the requirements of this Directive when contained individually in an article or a sealed packet.

287 New, uncycled and uncharged lithium ion cells and batteries are not subject to the requirements of this Directive if:

(a) the electrolyte does not meet the definition of any Class in RID; or

(b) the electrolyte meets the definition of a Class in RID, but the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow.

288 These substances shall not be classified and carried unless authorized by the competent authority on the basis of results from Series 2 tests and a Series 6(c) test of Part I of the Manual of Tests and Criteria on packages as prepared for transport (see 2.2.1.1).

289 Air bags or seat-belts installed in vehicles or in completed vehicle components such as steering columns, door panels, seats, etc. are not subject to the requirements of this Directive.

290 When this material meets the definitions and criteria of other classes as defined in Part 2, it shall be classified in accordance with the predominant subsidiary risk. Such material shall be declared under the proper shipping name and UN number appropriate for the material in that predominant Class, with the addition of the name applicable to this material according to column (2) of table A in Chapter 3.2, and shall be carried in accordance with the requirements applicable to that UN number. In addition, all other requirements specified in 2.2.7.9.1 shall apply, except 5.2.1.7.2 and 5.4.1.2.5.1(a).

291 Flammable liquefied gases shall be contained within refrigerating machine components. These components shall be designed and tested to at least three times the working pressure of the machinery. The refrigerating machines shall be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure retaining components during normal conditions of transport. Refrigerating machines are considered not subject to the requirements of this Directive if containing less than 12 kg of gas.

292 Only mixtures with not more than 23,5 % oxygen may be carried under this entry. A label conforming to Model No. 5.1 is not required for any concentrations within this limit.

293 The following definitions apply to matches:

(a) fusee matches are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat;

(b) safety matches are matches which are combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface;

(c) strike anywhere matches are matches that can be ignited by friction on a solid surface;

(d) Wax Vesta matches are matches that can be ignited by friction either on a prepared surface or on a solid surface.

295 Batteries need not be individually marked and labelled if the pallet bears the appropriate mark and label.

296 These articles may contain:

(a) Class 2, group A or O, according to 2.2.2.1.3, compressed gases;

(b) signal devices (Class 1) which may include smoke and illumination signal flares;

(c) electric storage batteries;

(d) first aid kits;

(e) strike anywhere matches.

297-499 (reserved)

500 3064 nitroglycerin, solution in alcohol with more than 1 % but not more than 5 % nitroglycerin, packed in accordance with packing instruction P300 of 4.1.4.1, is a substance of Class 3.

501 For naphthalene, molten, see UN No. 2304.

502 2006 plastics, nitrocellulose-based, self-heating, n.o.s., and 2002 celluloid scrap are substances of Class 4.2.

503 For phosphorus, white or yellow, molten, see UN No. 2447.

504 1847 potassium sulphide, hydrated with not less than 30 % water of crystallization, 1849 sodium sulphide, hydrated with not less than 30 % water of crystallization and 2949 sodium hydrosulphide with not less than 25 % water of crystallization are substances of Class 8.

505 2004 magnesium diamide is a substance of Class 4.2.

506 Alkaline earth metals and alkaline earth metal alloys in pyrophoric form are substances of Class 4.2.

1869 magnesium or magnesium alloys containing more than 50 % magnesium as pellets, turnings or ribbons, are substances of Class 4.1.

507 3048 aluminium phosphide pesticides, with additives inhibiting the emission of toxic flammable gases are substances of Class 6.1.

508 1871 titanium hydride and 1437 zirconium hydride are substances of Class 4.1.

2870 aluminium borohydride is a substance of Class 4.2.

509 1908 chlorite solution is a substance of Class 8.

510 1755 chromic acid solution is a substance of Class 8.

511 1625 mercuric nitrate, 1627 mercurous nitrate and 2727 thallium nitrate are substances of Class 6.1. Thorium nitrate, solid, uranyl nitrate hexahydrate solution and uranyl nitrate, solid are substances of Class 7.

512 1730 antimony pentachloride, liquid, 1731 antimony pentachloride solution, 1732 antimony pentafluoride and 1733 antimony trichloride are substances of Class 8.

513 0224 barium azide, dry or wetted with less than 50 % water, by mass is not permitted for carriage by rail. 1571 barium azide, wetted with not less than 50 % water, by mass is a substance of Class 4.1. 1854 barium alloys, pyrophoric, are substances of Class 4.2. 1445 barium chlorate, 1446 barium nitrate, 1447 barium perchlorate, 1448 barium permanganate, 1449 barium peroxide, 2719 barium bromate and 2741 barium hypochlorite with more than 22 % available chlorine are substances of Class 5.1. 1565 barium cyanide and 1884 barium oxide are substances of Class 6.1.

514 2464 beryllium nitrate is a substance of Class 5.1.

515 1581 chloropicrin and methyl bromide mixture and 1582 chloropicrin and methyl chloride mixture are substances of Class 2.

516 1912 methyl chloride and methylene chloride mixture is a substance of Class 2.

517 1690 sodium fluoride, 1812 potassium fluoride, 2505 ammonium fluoride, 2674 sodium fluorosilicate and 2856 fluorosilicates, n.o.s. are substances of Class 6.1.

518 1463 chromium trioxide, anhydrous (chromic acid, solid) is a substance of Class 5.1.

519 1048 hydrogen bromide, anhydrous, is a substance of Class 2.

520 1050 hydrogen chloride, anhydrous, is a substance of Class 2.

521 Solid chlorites and hypochlorites are substances of Class 5.1.

522 1873 perchloric acid aqueous solution with more than 50 % but not more than 72 % pure acid, by mass are substances of Class 5.1. Perchloric acid solutions containing more than 72 % (mass) acid, or mixtures of perchloric acid with any liquid other than water, are not to be accepted for carriage.

523 1382 anhydrous potassium sulphide and 1385 anhydrous sodium sulphide and their hydrates with less than 30 % water of crystallization, and 2318 sodium hydrosulphide with less than 25 % water of crystallization are substances of Class 4.2.

524 2858 finished zirconium products of a thickness of 18 μm or more are substances of Class 4.1.

525 Solutions of inorganic cyanides with a total cyanide ion content of more than 30 % shall be classified in Packing Group I, solutions with a total cyanide ion content of more than 3 % and not more than 30 % in Packing Group II and solutions with a cyanide ion content of more than 0,3 % and not more than 3 % in Packing Group III.

526 2000 celluloid is assigned to Class 4.1.

527 Organometallic compounds and their solutions, not spontaneously flammable, but which, in contact with water, emit flammable gases, are substances of Class 4.3, UN 3207. Flammable solutions containing organometallic compounds which are not spontaneously flammable and which, in contact with water, do not emit flammable gases, are substances of Class 3.

528 1353 fibres or fabrics impregnated with weakly nitrated cellulose, non-self heating, are articles of Class 4.1.

529 0135 mercury fulminate is not permitted for carriage by rail. 3077 mercurous chloride (calomel) is a substance of Class 9.

530 3293 hydrazine, aqueous solution with not more than 37 % hydrazine, by mass, is a substance of Class 6.1.

531 Mixtures having a flash-point below 23 °C and containing more than 55 % nitrocellulose, whatever its nitrogen content or containing not more than 55 % nitrocellulose with a nitrogen content above 12,6 % (by dry mass), are substances of Class 1 (see UN Nos. 0340 or 0342) or of Class 4.1.

532 2672 ammonia solution containing not less than 10 % but not more than 35 % ammonia is a substance of Class 8.

533 1198 formaldehyde solutions, flammable are substances of Class 3. Formaldehyde solutions, non-flammable, with less than 25 % formaldehyde are not subject to the requirements of this Directive.

534 While in some climatic conditions, petrol (gasoline) may have a vapour pressure at 50 °C of more than 110 kPa (1,10 bar) but not more than 150 kPa (1,50 bar) it is to continue to be treated as a substance which, at 50 °C, has a vapour pressure of not more than 110kPa (1,10 bar).

535 1469 lead nitrate and 1470 lead perchlorate are substances of Class 5.1.

536 For naphthalene, solid, see UN No. 1334.

537 2869 titanium trichloride or titanium chloride mixture, not pyrophoric, is a substance of Class 8.

538 For sulphur (in the solid state), see UN No. 1350.

539 Solutions of isocyanates having a flash-point of not less than 23 °C are substances of Class 6.1.

540 1326 hafnium powders, wetted, 1352 titanium powders, wetted or 1358 zirconium powders, wetted, with not less than 25 % water, are substances of Class 4.1.

541 Nitrocellulose mixtures with a water content, alcohol content or plasticizer content lower than the stated limits are substances of Class 1.

542 Talc containing tremolite and/or actinolite is covered by this entry.

543 1005 ammonia, anhydrous, 3318 ammonia solution with more than 50 % ammonia and 2073 ammonia solution, with more than 35 % but not more than 50 % ammonia, are substances of Class 2. Ammonia solutions with not more than 10 % ammonia are not subject to the requirements of this Directive.

544 1032 dimethylamine, 1036 ethylamine, 1061 methylamine, anhydrous and 1083 trimethylamine, anhydrous, are substances of Class 2.

545 0401 dipicryl sulphide, wetted with less than 10 % (mass) water is a substance of Class 1.

546 2009 zirconium, dry, finished sheets, strip or coiled wire, in thicknesses of less than 18 μm, is a substance of Class 4.2. Zirconium, dry, finished sheets, strip or coiled wire, in thicknesses of 254 μm or more, is not subject to the requirements of this Directive.

547 2210 maneb or 2210 maneb preparations in self-heating form are substances of Class 4.2.

548 Chlorosilanes which, in contact with water, emit flammable gases, are substances of Class 4.3.

549 Chlorosilanes having a flash-point of less than 23 °C and which, in contact with water, do not emit flammable gases are substances of Class 3. Chlorosilanes having a flash-point equal to or greater than 23 °C and which, in contact with water, do not emit flammable gases are substances of Class 8.

550 1333 cerium in slabs, rods or ingots is a substance of Class 4.1.

551 Solutions of these isocyanates having a flash-point below 23 °C are substances of Class 3.

552 Metals and metal alloys in powdered or other flammable form, liable to spontaneous combustion, are substances of Class 4.2.

Metals and metal alloys in powdered or other flammable form which, in contact with water, emit flammable gases are substances of Class 4.3.

553 This mixture of hydrogen peroxide and peroxyacetic acid shall, in laboratory testing (see Manual of Tests and Criteria, Part II, section 20), neither detonate in the cavitated state nor deflagrate at all and shall show no effect when heated under confinement nor any explosive power. The formulation shall be thermally stable (self-accelerating decomposition temperature 60 °C or higher for a 50 kg package), and a liquid compatible with peroxyacetic acid shall be used for desensitization. Formulations not meeting these criteria are to be regarded as substances of Class 5.2 (see Manual of Tests and Criteria, Part II, paragraph 20.4.3(g)).

554 Metal hydrides which, in contact with water, emit flammable gases are substances of Class 4.3. 2870 aluminium borohydride or 2870 aluminium borohydride in devices is a substance of Class 4.2.

555 Dust and powder of metals in non-spontaneously combustible form, non-toxic which nevertheless, in contact with water, emit flammable gases, are substances of Class 4.3.

556 Organometallic compounds and their solutions which ignite spontaneously are substances of Class 4.2. Flammable solutions with organometallic compounds in concentrations which, in contact with water, neither emit flammable gases in dangerous quantities nor ignite spontaneously are substances of Class 3.

557 Dust and powder of metals in pyrophoric form are substances of Class 4.2.

558 Metals and metal alloys in pyrophoric form are substances of Class 4.2. Metals and metal alloys which, in contact with water, do not emit flammable gases and are not pyrophoric or self-heating, but which are easily ignited, are substances of Class 4.1.

559 Mixtures of a hypochlorite with an ammonium salt are not to be accepted for carriage. 1791 hypochlorite solution is a substance of Class 8.

560 3257 elevated temperature liquid, n.o.s., at or above 100 °C and, for a substance with a flash-point, below its flash-point (including molten metals and molten salts) is a substance of Class 9.

561 Chloroformates having predominantly corrosive properties are substances of Class 8.

562 Spontaneously combustible organometallic compounds are substances of Class 4.2. Organometallic compounds, which, in contact with water, emit flammable gases, are substances of Class 4.3.

563 1905 selenic acid is a substance of Class 8.

564 2443 vanadium oxytrichloride, 2444 vanadium tetrachloride and 2475 vanadium trichloride are substances of Class 8.

565 Unspecified wastes resulting from medical/veterinary treatment of humans/animals or from biological research, and which are unlikely to contain substances of Class 6.2 shall be assigned to this entry. Decontaminated clinical wastes or wastes resulting from biological research which previously contained infectious substances are not subject to the requirements of Class 6.2.

566 2030 hydrazine hydrate and 2030 hydrazine aqueous solution, with not less than 37 % and not more than 64 % hydrazine, by mass, are substances of Class 8.

567 Mixtures containing more than 21 % oxygen by volume shall be classified as oxidizing.

568 Barium azide with a water content lower than the stated limit is assigned to Class 1, UN No. 0224 and is not permitted for carriage by rail.

569-579 (Reserved)

580 Tank wagons, special wagons and specially equipped wagons for carriage in bulk shall bear on both sides the marking in accordance with 5.3.3. Tank-containers, portable tanks, special containers and specially equipped containers for carriage in bulk shall bear this marking on all four sides.

581 This entry includes mixtures of methylacetylene and propadiene with hydrocarbons, which as:

mixture P1, contain not more than 63 % methylacetylene and propadiene by volume and not more than 24 % propane and propylene by volume, the percentage of C_4-saturated hydrocarbons being not less than 14 % by volume; and as mixture P2, contain not more than 48 % methylacetylene and propadiene by volume, and not more than 50 % propane and propylene by volume, the percentage of C_4-saturated hydrocarbons being not less than 5 % by volume; and mixtures of propadiene containing 1 % to 4 % methylacetylene.

In order to meet the requirements for the information in the consignment note (5.4.1.1), the name 'Mixture P1' or 'Mixture P2' may be used instead of the technical name

582 This entry includes, amongst others, mixtures of gases, indicated by the letter R …, which as:

— mixture F1, have a vapour pressure at 70 °C not exceeding 1,3 MPa (13 bar) and a density at 50 °C not lower than that of dichlorofluoromethane (1,30 kg/l):

— mixture F2, have a vapour pressure at 70 °C not exceeding 1,9 MPa (19 bar) and a density at 50 °C not lower than that of dichlorofluoromethane (1,21 kg/l):

— mixture F3, have a vapour pressure at 70 °C not exceeding 3 MPa (30 bar) and a density at 50 °C not lower than that of chlorofluoromethane (1,09 kg/l):

Note: Trichlorofluoromethane (refrigerant R 11), 1,1,1-trichloro-2,2,2-trifluoroethane (refrigerant R 113a), 1-chloro-1,2,2-trifluoroethane (refrigerant R 133) and 1-chloro-1,1,2-trifluoroethane (refrigerant R 133b) are not substances of Class 2. They may, however, enter into the composition of mixtures F1 to F3.

In order to meet the requirements for the information in the consignment note (5.4.1.1), the name 'Mixture F1', 'Mixture F2' or 'Mixture F3' may be used instead of the technical name.

583 This entry includes, amongst other, mixtures, which as:

— mixture A, have a vapour pressure at 70 °C not exceeding 1,1 MPa (11 bar) and a density at 50 °C not lower than 0,525 kg/l;

— mixture A 01, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a density at 50 °C not lower than 0,516 kg/l;

— mixture A 02, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a density at 50 °C not lower than 0,505 kg/l;

— mixture A 0, have a vapour pressure at 70 °C not exceeding 1,6 MPa (16 bar) and a density at 50 °C not lower than 0,495 kg/l;

— mixture A 1, have a vapour pressure at 70 °C not exceeding 2,1 MPa (21 bar) and a density at 50 °C not lower than 0,485 kg/l;

— mixture B 1, have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a density at 50 °C not lower than 0,474 kg/l;

— mixture B 2, have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a density at 50 °C not lower than 0,463 kg/l;

— mixture B, have a vapour pressure at 70 °C not exceeding 2,6 MPa (26 bar) and a density at 50 °C not lower than 0,450 kg/l;

— mixture C, have a vapour pressure at 70 °C not exceeding 3,1 MPa (31 bar) and a density at 50 °C not lower than 0,440 kg/l;

In order to meet the requirements for the information in the consignment note (5.4.1.1), the name

— 'Mixture A' or 'butane',

— 'Mixture A 01' or 'butane',

— 'Mixture A 02' or 'butane',

— 'Mixture A 0' or 'butane',

— 'Mixture A 1',

— 'Mixture B 1',

— 'Mixture B 2',

— 'Mixture B',

— 'Mixture C', or 'propane'

may be used instead of the technical name.

For carriage in tanks, the trade names 'butane' and 'propane' may only be used as an addition.

584 This gas is not subject to the requirements of this Directive when:

— it is in the gaseous state;

— it contains not more than 0,5 % air;

— it is contained in metal capsules (sodors, sparklets) free from defects that could reduce their strength;

— the tightness of the capsule closure is ensured;

— a capsule contains not more than 25 g of this gas and

— a capsule contains, per cm^3 of capacity, not more than 0,75 g of this gas.

585 Cinnabar is not subject to the requirements of this Directive.

586 Hafnium, titanium and zirconium powders shall contain a visible excess of water. Hafnium, titanium and zirconium powders, wetted, mechanically produced, of a particle size of 53 μm and over, or chemically produced, of a particle size of 840 μm and over, are not subject to the requirements of this Directive.

587 Barium stearate and barium titanate are not subject to the requirements of this Directive.

588 Solid hydrated forms of aluminium bromide and aluminium chloride are not subject to the requirements of this Directive.

589 Calcium hypochlorite mixtures, dry, containing not more than 10 % available chlorine are not subject to the requirements of this Directive.

590 Ferric chloride hexahydrate is not subject to the requirements of this Directive.

591 Lead sulphate with not more than 3 % free acid is not subject to the requirements of this Directive.

592 Uncleaned empty packagings (including empty IBCs and large packagings), empty tank wagons, empty demountable tanks, empty portable tanks, empty tankcontainers and empty small containers which have contained this substance are not subject to the requirements of this Directive.

593 This gas, intended for the cooling of e.g. medical or biological specimens, if contained in double wall receptacles which comply with the provisions of Packing Instruction P203 (11) (4.1.4.1) is not subject to the requirements of this Directive.

594 The following articles, manufactured and filled according to the regulations of the manufacturing State and packaged in strong outer packagings, are not subject to the requirements of this Directive:

— 1044 fire extinguishers provided with protection against inadvertent discharge;

— 3164 articles, pressurized, pneumatic or hydraulic, designed to withstand stresses greater than the internal gas pressure by virtue of transmission of force, intrinsic strength or construction standards.

595 Mixtures with a PCB or PCT content of not more than 50 mg/kg are not subject to the requirements of this Directive.

596 Cadmium pigments, such as cadmium sulphides, cadmium sulphoselenides and cadmium salts of higher fatty acids (e.g. cadmium stearate), are not subject to the requirements of this Directive.

597 Acetic acid solutions with not more than 10 % pure acid by mass, are not subject to the requirements of this Directive.

598 The following are not subject to the requirements of this Directive:

— new storage batteries when:

  — they are secured in such a way that they cannot slip, fall or be damaged;

  — they are provided with carrying devices, unless they are suitably stacked, e.g. on pallets;

  — there are no dangerous traces of alkalis or acids on the outside;

  — they are protected against short circuits;

— used storage batteries when:

— their cases are undamaged;

— they are secured in such a way that they cannot leak, slip, fall or be damaged, e.g. by stacking on pallets;

— there are no dangerous traces of alkalis or acids on the outside of the articles;

— they are protected against short circuits.

'Used storage batteries' means storage batteries carried for recycling at the end of their normal service life.

599 Manufactured articles or instruments containing not more than 1 kg of mercury are not subject to the requirements of this Directive.

600 Vanadium pentoxide, fused and solidified, is not subject to the requirements of this Directive.

601 Pharmaceutical products ready for use, e.g. cosmetics, drugs and medicines, which are substances manufactured and packed in packagings of a type intended for retail sale or distribution for personal or household consumption are not subject to the requirements of this Directive.

602 Phosphorus sulphides which are not free from yellow and white phosphorus are not to be accepted for carriage.

603 Anhydrous hydrogen cyanide not meeting the description for UN No. 1051 or UN No. 1614 is not to be accepted for carriage. Hydrogen cyanide (hydrocyanic acid) containing less than 3 % water is stable, if the pH-value is 2,5 ± 0,5 and the liquid is clear and colourless.

604 Ammonium bromate and its aqueous solutions and mixtures of a bromate with an ammonium salt are not to be accepted for carriage.

605 Ammonium chlorate and its aqueous solutions and mixtures of a chlorate with an ammonium salt are not to be accepted for carriage.

606 Ammonium chlorite and its aqueous solutions and mixtures of a chlorite with an ammonium salt are not to be accepted for carriage.

607 Mixtures of nitrates or nitrites with an ammonium salt are not to be accepted for carriage.

608 Ammonium permanganate and its aqueous solutions and mixtures of a permanganate with an ammonium salt are not to be accepted for carriage.

609 Tetranitromethane not free from combustible impurities is not to be accepted for carriage.

610 This substance is not to be accepted for carriage when it contains more than 45 % hydrogen cyanide.

611 Ammonium nitrate containing more than 0,2 % combustible substances (including any organic substance calculated as carbon) is not to be accepted for carriage unless it is a constituent of a substance or article of Class 1.

612 (Reserved)

613 Chloric acid solution containing more than 10 % chloric acid and mixtures of chloric acid with any liquid other than water is not to be accepted for carriage.

614 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in concentrations considered highly toxic according to the criteria in 2.2.61.1 is not to be accepted for carriage.

615 (Reserved)

616 Substances containing more than 40 % liquid nitric esters shall satisfy the exudation test specified in 2.3.1.

617 In addition to the type of explosive, the commercial name of the particular explosive shall be marked on the package and shall be specified in the consignment note.

618 In receptacles containing 1,2-butadiene, the oxygen concentration in the gaseous phase shall not exceed 50 ml/m^3.

619-622 (Reserved)

623 1829 sulphur trioxide shall be inhibited. Sulphur trioxide, 99,95 % pure or above, shall not be accepted for carriage by rail. Sulphur dioxide, at least 99,95 % pure may be carried by road without inhibitor in tanks, provided its temperature is maintained at 32,5 °C or above.

624 Fertilizers having an ammonium nitrate content or a content in combustible substances exceeding the values shown are not to be accepted for carriage except under the conditions applicable to Class 1. Fertilizers having an ammonium nitrate content below the limit values indicated are not subject to the requirements of RID. Ammonium nitrate fertilizers, uniform non-segregating mixtures of nitrogen phosphate or nitrogen potash types or complete fertilizers of nitrogen phosphate potash type whose molecular excess of nitrate ions over ammonium ions (calculated as potassium nitrate) is less than 10 % are not subject to the requirements of this Directive, provided that:

(a) their ammonium nitrate content is not more than 70 % and their total content of combustible material is not more than 0,4 %; or

(b) their ammonium nitrate content is not more than 45 % irrespective of their content of combustible material.

625 Packages containing these articles shall be clearly marked as follows: 'UN 1950 AEROSOLS'

626-627 (Reserved)

628 Uniform non-segregating mixtures of ammonium nitrate with added matter which is inorganic and chemically inert towards ammonium nitrate, with not less than 90 % ammonium nitrate and not more than 0,2 % combustible material (including organic material calculated as carbon), or mixtures with more than 70 % but less than 90 % ammonium nitrate and not more than 0,4 % total combustible material.

629 Uniform non-segregating mixtures of ammonium nitrate with calcium carbonate and/or dolomite, with more than 80 % but less than 90 % ammonium nitrate and not more than 0,4 % total combustible material.

630 Uniform non-segregating mixtures of ammonium nitrate and ammonium sulphate, with more than 45 % but not more than 70 % ammonium nitrate and not more than 0,4 % total combustible material.

631 Uniform non-segregating mixtures of nitrogen phosphate or nitrogen potash types or complete fertilizers of nitrogen phosphate potash type, with more than 70 % but less than 90 % ammonium nitrate and not more than 0,4 % total combustible material.

632 Considered to be spontaneously flammable (pyrophoric).

633 Packages and small containers containing this substance shall bear the following marking: 'Keep away from any source of ignition'. This marking shall be in an official language of the forwarding country, and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless any international tariffs or agreements concluded between the railways concerned provide otherwise.

634 Packages containing substances carried in deeply refrigerated liquid nitrogen shall, in addition, bear a label conforming to Model No. 2.2.

635 Packages containing these articles shall not bear a label conforming to Model No. 9 unless the article is fully enclosed by packaging, boxes or other means that prevent the ready identification of the article.

636 (a) With the approval of the competent authority of the country of origin, the quantity of lithium or lithium alloy in each cell may be raised to 60 g and a package may contain up to 2 500 g of lithium or lithium alloy; the competent authority shall determine the conditions of carriage as well as the type and duration of the test. If the country of origin is a COTIF Member State, the approval shall be recognized by the competent authority of the first COTIF Member State reached by the consignment. In such a case, a copy of the approval with the conditions of carriage shall be attached to the consignment note. This approval shall be drawn up in an official language of the forwarding country and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless any international tariffs or agreements concluded between the railways concerned provide otherwise.

(b) Cells contained in equipment shall not be capable of being discharged during carriage to the extent that the open circuit voltage falls below 2 volts or two thirds of the voltage of the undischarged cell, whichever is the lower.

(c) Packages containing used cells or batteries in unmarked packagings shall bear the inscription: 'Used lithium cells'.

(d) Articles which do not meet the requirements of this special requirement and/or special requirements 188, 230 and 287 as appropriate are not to be accepted for carriage.

637 Genetically modified micro-organisms are those which are not dangerous for humans and animals, but which could alter animals, plants, microbiological substances and ecosystems in such a way as cannot occur naturally. Genetically modified micro-organisms which have received a consent for deliberate release into the environment [1] are not subject to the requirements of Class 9. Live vertebrate or invertebrate animals shall not be used to carry these substances classified under this UN number unless the substance can be carried no other way.

638 This substance is a substance related to self-reactive substances (see 2.2.41.1.19).

639 See 2.2.2.3, classification code 2F, UN No. 1965, Note 2.

640 Physical and technical properties indicated in column (2) of Table A of Chapter 3.2 that require the use of different conditions of carriage within the same packing group shall also be shown in the consignment note.

641 (Reserved)

642 Unless permitted under 1.1.4.2, this entry of the UN Model Regulations shall not be used for the carriage of fertilizer solution containing free ammonia.

643 Pouring asphalt is not subject to the requirements of Class 9.

644 This substance is permitted for carriage provided that:

— the pH is between 5 and 7 measured in an aqueous solution of 10 % of the substance carried;

— the solution does not contain more than 0,2 % combustible material or chlorine compounds in quantities such that the chlorine level exceeds 0,02 %.

646 Carbon made by the steam activation process is not subject to the requirements of this Directive.

[1] See in particular Part C of Directive 90/220/EEC (Official Journal of the European Communities, OJ L 117, 8.5.1990, pp. 18-20), which sets out the authorization procedures for the European Community.

CHAPTER 3.4

Exemptions for the carriage of dangerous goods packed in limited quantities

3.4.1. Packagings used in accordance with 3.4.3 to 3.4.6 below, need only to conform to the general requirements of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

3.4.2. When the code LQ 0 is shown in column (7) of table A in Chapter 3.2 for a given substance or article, that substance or article is not exempted from any of the applicable requirements of this Directive when it is packed in limited quantities, unless otherwise specified.

3.4.3. Unless otherwise provided in this Chapter, when one of the codes LQ 1 or LQ 2 is shown in column (7) of table A in Chapter 3.2 for a given substance or article, the requirements of other Chapters of this Directive do not apply to the carriage of that substance or article, provided:

(a) the requirements of 3.4.5(a) to (c) are observed; with respect to these requirements, articles are considered to be inner packagings;

(b) inner packagings meet the conditions of 6.2.1.2 when LQ 1 is shown, and the conditions of 6.2.1.2, 6.2.4.1 and 6.2.4.2 when LQ 2 is shown.

3.4.4. Unless otherwise provided in this Chapter, when one of the codes LQ 3, LQ 20, LQ 21 or LQ 29 is shown in column (7) of Table A in Chapter 3.2 for a given substance, the requirements of other Chapters of this Directive do not apply to the carriage of that substance, provided:

(a) the substance is carried in combination packagings, the following outer packagings being allowed :

— steel or aluminium drums with removable head;

— steel or aluminium jerricans with removable head;

— plywood or fibreboard drums;

— plastics drums or jerricans with removable head;

— boxes of natural wood, plywood, reconstituted wood, fibreboard, plastics, steel or aluminium;

(b) the maximum quantity per inner packaging and per package, prescribed for the relevant code in the second and third column of the table in 3.4.6, are not exceeded;

(c) each package is clearly and durably marked with :

(i) the UN number of the goods contained therein, as given in column (1) of Table A in Chapter 3.2, preceded by the letters 'UN';

(ii) in the case of different goods with different UN numbers within a single package:

— the UN numbers of the goods contained therein, preceded by the letters 'UN', or

— the letters 'LQ' ([1]).

These markings shall be displayed within a diamond-shaped area surrounded by a line that measures at least 100 mm × 100 mm. If the size of the package so requires, the dimensions may be reduced, provided the markings remain clearly visible.

3.4.5. Unless otherwise provided in this Chapter, when one of the codes LQ 4 to LQ 19 and LQ 22 to LQ 28 is shown in column (7) of Table A in Chapter 3.2 for a given substance, the requirements of other Chapters of this Directive do not apply to the carriage of that substance, provided:

(a) the substance is carried:

— in combination packagings, in accordance with the requirements of 3.4.4(a), or

— in metal or plastics inner packagings which are not liable to break or be easily punctured, placed in shrink-wrapped or stretch-wrapped trays;

(b) the maximum quantity per inner packaging and per package, prescribed for the relevant code in the table in 3.4.6 (in the second and third column in the case of combination packagings, and in the fourth and fifth column in the case of shrink-wrapped or stretch-wrapped trays), are not exceeded;

(c) each package is clearly and durably marked as indicated in 3.4.4(c).

3.4.6. *Table*

Code	Combination packagings		Inner packagings placed in shrink-wrapped or stretch-wrapped trays	
	Inner packaging maximum contents	Package maximum gross mass (kg)/contents (l)	Inner packaging maximum contents	Package maximum gross mass (kg)/contents (l)
LQ 0	No exemption under the conditions of 3.4.2.			
LQ 1	120 ml	30 kg	120 ml	20 kg
LQ 2	1 l	30 kg	1 l	20 kg

([1]) The letter 'LQ' are an abbreviation of the words 'Limited Quantities'.

Code	Combination packagings		Inner packagings placed in shrink-wrapped or stretch-wrapped trays	
	Inner packaging maximum contents	Package maximum gross mass (kg)/contents (l)	Inner packaging maximum contents	Package maximum gross mass (kg)/contents (l)
LQ 3 ([a])	500 ml	1 l	not allowed	not allowed
LQ 4	3 l	12 l	1 l	12 litres and 20 kg
LQ 5	5 l	—	1 l	20 kg
LQ 6 ([a])	5 l	20 l	1 l	20 litres and 20 kg
LQ 7 ([a])	5 l	45 l	5 l	20 kg
LQ 8	3 kg	12 kg	500 g	12 kg
LQ 9	6 kg	24 kg	3 kg	20 kg
LQ 10	500 ml	30 kg	500 ml	20 kg
LQ 11 ([b])	500 g	30 kg	500 g	20 kg
LQ 12	1 kg	30 kg	1 kg	20 kg
LQ 13	1 l	30 kg	1 l	20 kg
LQ 14 ([b])	25 ml	30 kg	25 ml	20 kg
LQ 15 ([b])	100 g	30 kg	100 g	20 kg
LQ 16 ([b])	125 ml	30 kg	125 ml	20 kg
LQ 17	500 ml	2 l	100 ml	2 l
LQ 18	1 kg	4 kg	500 g	4 kg
LQ 19	3 l	12 l	1 l	12 l and 20 kg
LQ 20	100 ml	400 ml	not allowed	not allowed
LQ 21	500 g	2 kg	not allowed	not allowed
LQ 22	1 l	4 l	500 ml	4 l and 20 kg
LQ 23	3 kg	12 kg	1 kg	12 kg
LQ 24	6 kg	24 kg	2 kg	20 kg
LQ 25	1 kg	4 kg	l kg	20 kg
LQ 26	500 ml	2 l	500 ml	2 l
LQ 27	6 kg	24 kg	6 kg	20 kg
LQ 28	3 l	12 l	3 l	12 l and 20 kg
LQ 29	500 ml (per apparatus) if packed in leakproof packagings and conforming to 3.4.4(c) only	2 l if packed in leakproof packagings and conforming to 3.4.4(c) only	not allowed	not allowed

([a]) In the case of homogenous mixtures of Class 3 containing water, the quantities specified relate only to the substance of Class 3 contained in those mixtures.

([b]) For Class 5.2 these quantities of substances may be packed together with other substances or articles, provided they will not react dangerously with these substances and articles in the event of leakage.

Part 4

PACKING AND TANK PROVISIONS

CHAPTER 4.1

Use of packagings, including intermediate bulk containers (IBCs) and large packagings

Introductory notes

NOTE 1. *Packing groups*

Dangerous substances of all classes other than those of classes 1, 2, 5.2, 6.2 and 7 and than the self-reactive substances of Class 4.1 have for packing purposes been assigned to one or more of three Packing Groups in accordance with the degree of danger they present, i.e.:

Packing Group I:	substances presenting high danger;
Packing Group II	substances presenting medium danger ; and
Packing Group III	substances presenting low danger.

The Packing Group to which a substance is assigned is indicated in Table A of Chapter 3.2.

NOTE 2. *Explosives, self-reactive substances and organic peroxides*

Unless otherwise required in this Directive, the packagings, including IBCs and large packagings, used for goods of Class l, self-reactive substances of Class 4.1 and organic peroxides of Class 5.2 shall comply with the requirements for the medium danger group (Packing Group II).

4.1.1. *General Requirements for the packing of dangerous goods, other than goods of classes 2, 6.2 or 7, in packagings, including IBCs and large packagings*

NOTE. Some of these general requirements may apply to the packing of goods of Class 2, 6.2 and 7. Refer to 4.1.6 (Class 2), 4.1.8 (Class 6.2), 4.1.9 (Class 7) and to the applicable packing instruction in 4.1.4.

4.1.1.1. Dangerous goods shall be packed in good quality packagings, including IBCs and large packagings, which shall be strong enough to withstand the shocks and loadings normally encountered during carriage, including trans-shipment between means of transport and/or warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings, including IBCs and large packagings, shall be constructed and closed so as to prevent any loss of contents when prepared for transport which might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure (resulting from altitude, for example). No dangerous residue shall adhere to the outside of packagings, IBCs and large packagings during carriage. These requirements apply, as appropriate, to new, reused, reconditioned or remanufactured packagings and to new and reused IBCs and large packagings.

4.1.1.2. Parts of packagings, including IBCs and large packagings, which are in direct contact with dangerous goods:

(a) shall not be affected or significantly weakened by those dangerous goods; and

(b) shall not cause a dangerous effect e.g. catalysing a reaction or reacting with the dangerous goods.

Where necessary, they shall be provided with a suitable inner coating or treatment.

4.1.1.3. Unless otherwise required in this Directive, each packaging, including IBCs and large packagings, except inner packagings, shall conform to a design type successfully tested in accordance with the requirements of 6.1.5, 6.5.4 or 6.6.5, respectively. The packagings for which the test is not required are listed in 6.1.1.3.

4.1.1.4. When filling packagings, including IBCs and large packagings, with liquids, sufficient ullage (outage) shall be left to ensure that neither leakage nor permanent distortion of the packaging occurs as a result of an expansion of the liquid caused by temperatures likely to occur during transport. Unless specific requirements are prescribed, liquids shall not completely fill a packaging at a temperature of 55 °C. However, sufficient ullage shall be left in an IBC to ensure that at the mean bulk temperature of 50 °C it is not filled to more than 98 % of its water capacity. For a filling temperature of 15 °C, the degree of filling shall be determined as follows, unless otherwise provided, either:

(a)

Boiling point (initial boiling point) of the substance in °C	< 60	≥ 60 < 100	≥ 100 < 200	≥ 200 < 300	≥ 300
Degree of filling as a percentage of the capacity of the packaging	90	92	94	96	98

or

(b) degree of filling $= \frac{98}{1 + \alpha(50 - t_f)}$ % of the capacity of the packaging.

In this formula α represents the mean coefficient of cubic expansion of the liquid substance between 15 °C and 50 °C; that is to say, for a maximum rise in temperature of 35 °C,

α is calculated according to the formula: $\alpha = \frac{d_{15} - d_{50}}{35 \text{ x } d_{50}}$

d_{15} and d_{50} being the relative densities ([1]) of the liquid at 15 °C and 50 °C and t_F the mean temperature of the liquid at the time of filling.

4.1.1.5. Inner packagings shall be packed in an outer packaging in such a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents into the outer packaging. Inner packagings that are liable to break or be punctured easily, such as those made of glass, porcelain or stoneware or of certain plastics materials, etc., shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material or of the outer packaging.

4.1.1.6. Dangerous goods shall not be packed together in the same outer packaging or in large packagings, with dangerous or other goods if they react dangerously with each other (see definition of 'dangerous reaction' in 1.2.1).

NOTE. For mixed packing special requirements, see 4.1.10.

4.1.1.7. The closures of packagings containing wetted or diluted substances shall be such that the percentage of liquid (water, solvent or phlegmatizer) does not fall below the prescribed limits during transport.

4.1.1.7.1. Where two or more closure systems are fitted in series on an IBC, that nearest to the substance being carried shall be closed first.

4.1.1.8. Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of carriage. Where overpressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other cause), the packaging may be fitted with a vent, provided that the gas emitted will not cause danger on account of its toxicity, its flammability or the quantity released. A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that, when the packaging is in the attitude in which it is intended to be carried, leakages of liquid and the penetration of foreign matter are prevented under normal conditions of carriage.

4.1.1.9. New, remanufactured or reused packagings, including IBCs and large packagings, or reconditioned packagings and repaired IBCs shall be capable of passing the tests prescribed in 6.1.5, 6.5.4 or 6.6.5 respectively. Before being filled and handed over for carriage, every packaging, including IBCs and large packagings, shall be inspected to ensure that it is free from corrosion, contamination or other damage and every IBC shall be inspected with regard to the proper functioning of any service equipment. Any packaging which shows signs of reduced strength as compared with the approved design type shall no longer be used or shall be so reconditioned, that it is able to withstand the design type tests. Any IBC which shows signs of reduced strength as compared with the tested design type shall no longer be used or shall be so repaired that it is able to withstand the design type tests.

4.1.1.10. Liquids shall be filled only into packagings, including IBCs, which have an appropriate resistance to the internal pressure that may develop under normal conditions of carriage. Packagings and IBCs marked with the hydraulic test pressure prescribed in 6.1.3.1(d) and 6.5.2.2.1 respectively shall be filled only with a liquid having a vapour pressure:

([1]) Relative density (d) is considered to be synonymous with specific gravity (SG) and will be used throughout this Chapter.

(a) such that the total gauge pressure in the packaging or IBC (i.e. the vapour pressure of the filling substance plus the partial pressure of air or other inert gases, less 100 kPa) at 55 °C, determined on the basis of a maximum degree of filling in accordance with 4.1.1.4 and a filling temperature of 15 °C, will not exceed two-thirds of the marked test pressure; or

(b) at 50 °C less than four-sevenths of the sum of the marked test pressure plus 100 kPa; or

(c) at 55 °C less than two-thirds of the sum of the marked test pressure plus 100 kPa.

Metal IBCs intended for the carriage of liquids shall not be used to carry liquids having a vapour pressure of more than 110kPa (1,1 bar) at 50 °C or 130kPa (1,3 bar) at 55 °C.

Examples of required marked test pressures for packagings, including IBCs, calculated as in 4.1.1.10 (c)

UN No	Name	Class	Packing group	V_{p55} (kPa)	V_{p55} × 1,5 (kPa)	(V_{p55} × 1,5) minus 100 (kPa)	Required minimum test pressure under 6.1.5.5.4.(c) (kPa)	Minimum test pressure (gauge) to be marked on the packaging (kPa)
2056	Tetrahydrofuran	3	II	70	105	5	100	100
2247	n-Decane	3	III	1,4	2,1	− 97,9	100	100
1593	Dichloromethane	6,1	III	164	246	146	146	150
1155	Diethylether	3	I	199	299	199	199	250

NOTE 1. For pure liquids the vapour pressure at 55 °C (V_{p55}) can often be obtained from scientific tables.

NOTE 2. The table refers to the use of 4.1.1.10(c) only, which means that the marked test pressure shall exceed 1.5 times the vapour pressure at 55 °C less 100 kPa. When, for example, the test pressure for n-decane is determined according to 6.1.5.5.4 (a), the minimum marked test pressure may be lower.

NOTE 3. For diethyl ether the required minimum test pressure under 6.1.5.5.5 is 250 kPa.

4.1.1.11. Empty packagings, including empty IBCs and empty large packagings, that have contained a dangerous substance are subject to the same requirements as those for a filled packaging, unless adequate measures have been taken to nullify any hazard.

4.1.1.12. Every packaging, including an IBC, intended to contain liquids shall successfully undergo a suitable leakproofness test, and be capable of meeting the appropriate test level indicated in 6.1.5.4.3 or 6.5.4.7 for the various types of IBCs:

(a) before it is first used for carriage;

(b) after remanufacturing or reconditioning of any packaging, before it is re-used for carriage;

(c) after the repair of any IBC, before it is re-used for carriage.

For this test the packaging, or IBC, need not have its closures fitted. The inner receptacle of a composite packaging or IBC may be tested witwood the outer packaging, provided the test results are not affected. This test is not necessary for

— inner packagings of combination packagings or large packagings,

— inner receptacles of composite packagings (glass, porcelain or stoneware), bearing the symbol 'RID/ADR' in accordance with 6.1.3.1(a)(ii),

— light gauge metal packagings bearing the symbol 'RID/ADR' in accordance with 6.1.3.1(a)(ii)

4.1.1.13. Packagings, including IBCs, used for solids which may become liquid at temperatures likely to be encountered during carriage shall also be capable of containing the substance in the liquid state.

4.1.1.14. Packagings, including IBCs, used for powdery or granular substances shall be sift-proof or shall be provided with a liner.

4.1.1.15. For plastics drums and jerricans, rigid plastics IBCs and composite IBCs with plastics inner receptacles, unless otherwise approved by the competent authority, the period of use permitted for the carriage of dangerous substances shall be five years from the date of manufacture, except where a shorter period of use is prescribed because of the nature of the substance to be carried.

4.1.1.16. Packages marked in accordance with 6.1.3 but which were approved in a State which is not a Member State may nevertheless be used for carriage under this Directive.

4.1.1.17. Use of salvage packagings

4.1.1.17.1 Damaged, defective or leaking packages containing dangerous goods, or dangerous goods that have spilled or leaked may be carried in salvage packagings in accordance with 6.1.5.1.11. This does not prevent the use of bigger size packagings of appropriate type and performance level under the conditions of 4.1.1.17.2.

4.1.1.17.2 Appropriate measures shall be taken to prevent excessive movement of the damaged or leaking packages within a salvage packaging. When the salvage packaging contains liquids, sufficient inert absorbent material shall be added to eliminate the presence of free liquid.

4.1.2. *Additional general requirements for the use of IBC's*

4.1.2.1. When IBCs are used for the carriage of liquids with a flash-point of 61 °C (closed cup) or lower, or of powders liable to dust explosion, measures shall be taken to prevent a dangerous electrostatic discharge.

4.1.2.2. The periodic testing and inspection requirements for IBCs are covered in Chapter 6.5. An IBC shall not be filled or handed over for carriage after the date of expiry of the periodic test required by 6.5.4.14.3, or the date of expiry of the periodic inspection required by 6.5.1.6.4. However, an IBC filled prior to the date of expiry of the periodic test or inspection may be carried for a period not to exceed three months beyond the date of expiry of the periodic test or inspection. In addition, an IBC may be carried after the date of expiry of the periodic test or inspection:

(a) after emptying but before cleaning, for purposes of performing the next required test or inspection prior to refilling; and

(b) unless otherwise specified by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test or inspection in order to allow the return of dangerous goods or residues for proper disposal or recycling.

NOTE. For the information in the consignment note, see 5.4.1.1.11.

4.1.2.3. IBCs of type 31HZ2 shall be filled to at least 80 % of the volume of the outer casing and always be carried in covered wagons or closed containers.

4.1.3. *General requirements concerning packing instructions*

4.1.3.1. Packing Instructions applicable to dangerous goods of Classes 1 to 9 are listed in 4.1.4. They are subdivided into three sub-sections depending on the type of packagings to which they apply:

4.1.4.1 for packagings other than IBCs and large packagings; these Packing Instructions are designated by an alphanumeric code starting with the letter 'R' for packagings specific to this Directive and Directive 94/55/EC;

4.1.4.2 for IBCs; these are designated by an alphanumeric code starting with the letters 'IBC';

4.1.4.3 for large packagings; these are designated by an alphanumeric code starting with the letters 'LP'.

Generally, Packing Instructions specify that the general requirements of 4.1.1, 4.1.2 and/or 4.1.3, as appropriate, are applicable. They may also require compliance with the special requirements of 4.1.5, 4.1.6, 4.1.7, 4.1.8 or 4.1.9 when appropriate. Special packing requirements may also be specified in the packing instruction for individual substances or articles. They are also designated by an alphanumeric code comprising the letters:

'PP' for packagings other than IBCs and large packagings, or 'RR' for special requirements specific to this Directive and Directive 94/55/EC;

'B' for IBCs;

'L' for large packagings.

Unless otherwise specified, each packaging shall conform to the applicable requirements of Part 6. Generally Packing Instructions do not provide guidance on compatibility and the user shall not select a packaging witwood checking that the substance is compatible with the packaging material selected (e.g. glass receptacles are unsuitable for most fluorides). Where glass receptacles are permitted in the packing instructions porcelain and stoneware packagings are also allowed.

4.1.3.2. Column (8) of Table A of Chapter 3.2 shows for each article or substance the Packing Instruction(s) that shall be used. Columns (9a) and (9b) indicate the special packing requirements and the mixed packing requirements (see 4.1.10) applicable to specific substances or articles.

4.1.3.3. Each packing instruction shows, where applicable, the acceptable single and combination packagings. For combination packagings, the acceptable outer packagings, inner packagings and when applicable the maximum quantity permitted in each inner or outer packaging, are shown. Maximum net mass and maximum capacity are as defined in 1.2.1.

4.1.3.4. The following packagings shall not be used when the substances being carried are liable to become liquid during carriage:

Packagings

Drums:	1D and 1G
Boxes:	4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2
Bags:	5L1, 5L2, 5L3, 5H1, 5H2, 5H3, 5H4, 5M1 and 5M2
Composite packagings:	6HC, 6HD2, 6HG1, 6HG2, 6HD1, 6PC, 6PD1, 6PD2, 6PG1, 6PG2 and 6PH1

IBCs

For substances of Packing Group I: All types of IBC

For substances of Packing Groups II and III:

Wooden:	11C, 11D and 11F
Fibreboard:	11G
Flexible:	13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2
Composite:	11HZ2, 21HZ2 and 31HZ2

For the purposes of this paragraph, substances and mixtures of substances having a melting point equal to or less than 45 °C shall be treated as solids liable to become liquid during carriage.

4.1.3.5. Where the packing instructions in this Chapter authorize the use of a particular type of outer packaging in a combination packaging (e.g. 4G), packagings bearing the same packaging identification code followed by the letters 'V', 'U' or 'W' marked in accordance with the requirements of Part 6 (e.g. 4GV, 4GU or 4GW) may also be used under the same conditions and limitations applicable to the use of that type of outer packaging according to the relevant packing instructions. For example, a combination packaging marked with the packaging code '4GV' may be used whenever a combination packaging marked '4G' is authorized, provided the requirements in the relevant packing instruction regarding types of inner packagings and quantity limitations are respected.

4.1.3.6. Gas cylinders and gas receptacles approved by the competent authority are authorized for the carriage of any liquid or solid substance assigned to Packing Instruction P001 or P002 unless otherwise indicated in the Packing Instruction or by a special requirement in column (9a) of Table A of Chapter 3.2. The capacity of gas cylinders shall not exceed 450 litres. The capacity for gas receptacles shall not exceed 1 000 litres.

4.1.3.7. Packagings or IBCs not specifically authorized in the applicable packing instruction shall not be used for the carriage of a substance or article unless specifically allowed under a temporary derogation agreed between Member States in accordance with 1.5.1.

4.1.4. *List of Packing Instructions*

NOTE. Although the following Packing Instructions use the same numbering system as used in the IMDG Code and the UN Model Regulations, readers should be aware that some of the details may be different.

4.1.4.1. Packing Instructions concerning the use of packagings (except IBCs and large packagings)

P001	PACKING INSTRUCTION (LIQUIDS)			**P001**
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:				
Combination packagings:		Maximum capacity/Net mass (see 4.1.3.3.)		
Inner packagings	Outer packagings	Packing Group I	Packing Group II	Packing Group III
Glass 10 l Plastics 30 l Metal 40 l	*Drums*			
	steel (1A2)	250 kg	400 kg	400 kg
	aluminium (1B2)	250 kg	400 kg	400 kg
	metal other than steel or aluminium (1N2)	250 kg	400 kg	400 kg
	plastics (1H2)	250 kg	400 kg	400 kg
	plywood (1D)	150 kg	400 kg	400 kg
	fibreboard (1G)	75 kg	400 kg	400 kg
	Boxes			
	steel (4A)	250 kg	400 kg	400 kg
	aluminium (4B)	250 kg	400 kg	400 kg
	natural wood (4C1, 4C2)	150 kg	400 kg	400 kg
	plywood (4D)	150 kg	400 kg	400 kg
	reconstituted wood (4F)	75 kg	400 kg	400 kg
	fibreboard (4G)	75 kg	400 kg	400 kg
	expanded plastics (4H1)	60 kg	60 kg	60 kg
	solid plastics (4H2)	150 kg	400 kg	400 kg
	Jerricans			
	steel (3A2)	120 kg	120 kg	120 kg
	aluminium (3B2)	120 kg	120 kg	120 kg
	plastics (3H2)	120 kg	120 kg	120 kg
Single packagings:				
Drums				
steel, non-removable head (1A1)		250 l	450 l	450 l
steel, removable head (1A2)		250 l ([a])	450 l	450 l
aluminium, non-removable head (1B1)		250 l	450 l	450 l
aluminium, removable head (1B2)		250 l ([a])	450 l	450 l
metal other than steel or aluminium, non-removable head (1N1)		250 l	450 l	450 l
metal other than steel or aluminium, removable head (1N2)		250 l ([a])	450 l	450 l
plastics, non-removable head (1H1)		250 l	450 l	450 l
plastics, removable head (1H2)		250 l ([a])	450 l	450 l
Jerricans				
steel, non-removable head (3A1)		60 l	60 l	60 l
steel, removable head (3A2)		60 l ([a])	60 l	60 l
aluminium, non-removable head (3B1)		60 l	60 l	60 l
aluminium, removable head (3B2)		60 l ([a])	60 l	60 l
plastics, non-removable head (3H1)		60 l	60 l	60 l
plastics, removable head (3H2)		60 l ([a])	60 l	60 l
Composite packagings				
— plastics receptacle with outer steel or aluminium drum (6HA1, 6HB1)		250 l	250 l	250 l
— plastics receptacle with outer fibreboard, plastics or plywood drum (6HG1, 6HH1, 6HD1)		120 l	250 l	250 l
— plastics receptacle with outer steel or aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or solid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 of 6HH2)		60 l	60 l	60 l

P001	PACKING INSTRUCTION (LIQUIDS) *(cont'd)*		**P001**
	Maximum capacity/Net mass (see 4.1.3.3.)		
	Packing Group I	Packing Group II	Packing Group III
Single packagings: *(cont'd)* — glass receptacle with outer steel, aluminium, fibreboard, plywood, solid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or with outer steel or aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)	60 l	60 l	60 l

Additional requirement:

For substances of Class 3, Packing Group III, which give off small quantities of carbon dioxide or nitrogen, the packagings shall be vented.

Special packing provisions:

PP1 For UN Nos. 1133, 1210, 1263 and 1866, substances of Packing Groups II and III may be carried in quantities of 5 litres or less per packaging in metal or plastics packagings which are not required to meet the performance tests of Chapter 6.1, provided that such packagings are carried:

(a) in palletized loads, a pallet box or unit load device, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet; or

(b) as inner packagings of combination packagings with a maximum net mass of 40 kg.

PP2 For UN Nos. 3065 and 1170, wooden barrels (2C1 and 2C2) may be used.

PP4 For UN No. 1774, packagings shall meet the Packing Group II performance level.

PP5 For UN No. 1204, packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and gas receptacles shall not be used for these substances.

PP6 For UN Nos. 1851 and 3248, the maximum net quantity per package shall be 5 l.

PP10 For UN No. 1791, Packing Group II, the packaging shall be vented.

PP31 For UN No. 1131, packagings shall be hermetically sealed.

PP33 For UN No. 1308, Packing Groups I and II, only combination packagings with a maximum gross mass of 75 kg allowed.

Special packing provisions specific to this Directive and Directive 94/55/EC

RR1 For UN No. 1790, with not more than 85 % hydrofluoric acid and UN No. 2031 containing more than 55 % pure acid, the permissible period of use for plastics drums and jerricans used as single packagings shall be two years from the date of manufacture.

RR2 For UN No. 1261, removable head packagings are not permitted.

([a]) Only substances with a viscosity of more than 2 680 mm^2/s are authorized.

P002	PACKING INSTRUCTION (SOLIDS)			**P002**
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:				
Combination packagings:		Maximum/net mass (see 4.1.3.3.)		
Inner packagings	Outer packagings	Packing-Group I	Packing-Group II	Packing-Group III
Glass 10 kg Plastics (a) 50 kg Metal 50 kg Paper (a) (b) (c) 50 kg Fibreboard (a) (b) (c) 50 kg	*Drums*			
	steel (1A2)	400 kg	400 kg	400 kg
	aluminium (1B2)	400 kg	400 kg	400 kg
	metal other than steel or aluminium (1N2)	400 kg	400 kg	400 kg
	plastics (1H2)	400 kg	400 kg	400 kg
	plywood (1D)	400 kg	400 kg	400 kg
	fibreboard (1G)	400 kg	400 kg	400 kg
	Boxes			
	steel (4A)	400 kg	400 kg	400 kg
	aluminium (4B)	400 kg	400 kg	400 kg
	natural wood (4C1)	250 kg	400 kg	400 kg
	natural wood, with sift-proof walls (4C2)	250 kg	400 kg	400 kg
	plywood (4D)	250 kg	400 kg	400 kg
	reconstituted wood (4F)	125 kg	400 kg	400 kg
	fibreboard (4G)	125 kg	400 kg	400 kg
	expanded plastics (4H1)	60 kg	60 kg	60 kg
	rigid plastics (4H2)	250 kg	400 kg	400 kg
	Jerricans			
	steel (3A2)	120 kg	120 kg	120 kg
	aluminium (3B2)	120 kg	120 kg	120 kg
	plastics (3H2)	120 kg	120 kg	120 kg
Single packagings:				
Drums				
steel (1A1 or 1A2) (d)		400 kg	400 kg	400 kg
aluminium (1B1 or 1B2) (d)		400 kg	400 kg	400 kg
metal other than steel or aluminium (1N1 or 1N2) (d)		400 kg	400 kg	400 kg
plastics (1H1 or 1H2) (d)		400 kg	400 kg	400 kg
fibreboard (1G) (e)		400 kg	400 kg	400 kg
plywood (1D) (e)		400 kg	400 kg	400 kg
Jerricans				
steel (3A1 or 3A2) (d)		120 kg	120 kg	120 kg
aluminium (3B1 or 3B2) (d)		120 kg	120 kg	120 kg
plastics (3H1 or 3H2) (d)		120 kg	120 kg	120 kg
Boxes				
steel (4A) (e)		Not allowed	400 kg	400 kg
aluminium (4B) (e)		Not allowed	400 kg	400 kg
natural wood (4C1) (e)		Not allowed	400 kg	400 kg
plywood (4D) (e)		Not allowed	400 kg	400 kg
reconstituted wood (4F) (e)		Not allowed	400 kg	400 kg
natural wood with sift-proof walls (4C2) (e)		Not allowed	400 kg	400 kg
fibreboard (4G) (e)		Not allowed	400 kg	400 kg
rigid plastics (4H2) (e)		Not allowed	400 kg	400 kg
Bags				
bags (5H3, 5H4, 5L3, 5M2) (e)		Not allowed	50 kg	50 kg
Composite packagings				
— plastics receptacle with outer steel, aluminium, plywood, fibreboard or plastics drum (6HA1, 6HB1, 6HG1 (e), 6HD1 (e), of 6HH1)		400 kg	400 kg	400 kg
— plastics receptacle with outer steel or aluminium crate or box, wooden box, plywood box, fibreboard box or rigid plastics box (6HA2, 6HB2, 6HC, 6HD2 (e), 6HG2 (e) of 6HH2)		75 kg	75 kg	75 kg

P002	PACKING INSTRUCTION (SOLIDS) *(cont'd)*		P002
	Maximum/net mass (see 4.1.3.3.)		
	Packing-Group I	Packing-Group II	Packing-Group III
Single packagings: *(cont'd)* — glass receptacle with outer steel, aluminium plywood or fibreboard drum (6PA1, 6PB1, 6PD1 ([e]) of 6PG1 ([e])) or with outer steel or aluminium crate or box or with outer wooden, or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PD2 ([e]) of 6PG2 ([e])) or with outer solid plastics or expanded plastics packaging (6PH2 of 6PH1 ([e]))	75 kg	75 kg	75 kg

Special packing provisions:

PP6 For UN No. 3249, the maximum net mass per package shall be 5 kg.

PP7 For UN No. 2000, celluloid may be carried unpacked on pallets, wrapped in plastic film and secured by appropriate means, such as steel bands, as a wagon load or as a full load in covered wagons or in closed containers. Each pallet shall not exceed 1 000 kg.

PP8 For UN No. 2002, packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and gas receptacles shall not be used for these substances.

PP9 For UN Nos. 3175, 3243 and 3244, packagings shall conform to a design type that has passed a leakproofness test at the Packing Group II performance level.

PP11 For UN No. 1309, Packing Group III, and UN No. 1362, 5H1, 5L1 and 5M1 bags are allowed if they are overpacked in plastic bags or are wrapped in shrink or stretch wrap on pallets.

PP12 For UN Nos. 1361, 2213 and UN No. 3077, 5H1, 5L1 and 5M1 bags are allowed when carried in covered wagons or closed containers.

PP13 For articles classified under UN No. 2870, only combination packagings meeting the Packing Group I performance level are authorized.

PP14 For UN Nos. 2211, 2698 and 3314, packagings are not required to meet the performance tests in Chapter 6.1.

PP15 For UN Nos. 1324 and 2623, packagings shall meet the Packing Group III performance level.

PP20 For UN No. 2217, any siftproof and tear-proof receptacle may be used.

PP30 For UN No. 2471, paper or fibreboard inner packagings are not permitted.

PP34 For UN No. 2969 (as whole beans), 5H1, 5L1 and 5M1 bags are permitted.

PP37 For UN Nos. 2590 and 2212, 5M1 bags are permitted. Packages shall be carried in covered wagons or closed containers or as stretch or shrink-wrapped unit loads.

PP38 For UN No. 1309, Packing Group II, bags are permitted only in covered wagons or closed containers.

([a]) These inner packagings shall be sift-proof.
([b]) These inner packagings shall not be used when the substances being carried may become liquid during carriage (see 4.1.3.4).
([c]) These inner packagings shall not be used for substances of Packing Group I.
([d]) These packagings shall not be used for substances of Packing Group I that may become liquid during carriage (see 4.1.3.4).
([e]) These packagings shall not be used when substances being carried may become liquid during carriage (see 4.1.3.4).

P003	PACKING INSTRUCTION	P003
Dangerous goods shall be placed in suitable outer packagings. The packagings shall meet the provisions of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.8 and 4.1.3 and be so designed that they meet the construction requirements of 6.1.4. Outer packagings constructed of suitable material of adequate strength and design in relation to the packaging capacity and its intended use shall be used. Where this packing instruction is used for the carriage of articles or inner packagings of combination packagings, the packaging shall be designed and constructed to prevent inadvertent discharge of articles during normal conditions of carriage.		
Special packing provisions: **PP16** For UN No. 2800, batteries shall be protected from short circuits and shall be securely packed in strong outer packagings. *NOTE 1.* Non-spillable batteries which are an integral part of, and necessary for, the operation of mechanical or electronic equipment shall be securely fastened in the battery holder on the equipment and protected in such a manner as to prevent damage and short circuits. *NOTE 2.* For used batteries (UN No. 2800), see P801a. **PP19** For UN Nos. 1364 and 1365, carriage as bales is authorized. **PP20** For UN Nos. 1363, 1386, 1408 and 2793 any sift-proof, tearproof receptacle may be used. **PP32** UN Nos. 2857 and 3358 may be carried unpackaged, in crates or in appropriate overpacks.		

P099	PACKING INSTRUCTION	P099
Only packagings which are approved by the competent authority may be used.		

P101	PACKING INSTRUCTION	P101
Only packagings which are approved by the competent authority of the country of origin may be used. If the country of origin is not a Member State, the packaging shall be approved by the competent authority of the first Member State reached by the consignment. *NOTE.* For the information in the consignment note, see 5.4.1.2.1(e)		

P111	PACKING INSTRUCTION	**P111**
The following packages are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, waterproofed plastics textile, rubberized	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2)
Sheets plastics textile, rubberized		*Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Special packing provision: **PP43** For UN No. 0159, inner packagings are not required when metal (1A2 or 1B2) or plastics (1H2) drums are used as outer packagings.		

P112(a)	PACKING INSTRUCTION (Solid wetted, 1.1D)	**P112(a)**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, multiwall, water resistant plastics textile textile, rubberized woven plastics *Receptacles* metal plastics	*Bags* plastics textile, plastic coated or lined *Receptacles* metal plastics	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)
Additional requirement: Intermediate packagings are not required if leakproof removable head drums are used as the outer packaging.		
Special packing provisions: **PP26** For UN Nos. 0004, 0076, 0078, 0154, 0219 and 0394, packagings shall be lead free. **PP45** For UN Nos. 0072 and 0226, intermediate packagings are not required.		

P112(b)	PACKING INSTRUCTION (Solid dry, other than powder 1.1D)	**P112(b)**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, kraft paper, multiwall, water resistant plastics textile textile, rubberized woven plastics	*Bags* (for UN No. 0150 only) plastics textile, plastic coated or lined	*Bags* woven plastics, sift-proof (5H2) woven plastics, water resistant (5H3) plastics, film (5H4) textile, sift-proof (5L2) textile, water resistant (5L3) paper, multiwall, water resistant (5M2) *Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)
Special packing provisions: **PP26** For UN Nos. 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings shall be lead free. **PP46** For UN Nos. 0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state and a maximum net mass of 30 kg. **PP47** For UN Nos. 0222 and 0223, inner packagings are not required when the outer packaging is a bag.		

<table>
<tr><td>P112(c)</td><td>PACKING INSTRUCTION
(Solid dry powder 1.1D)</td><td>P112(c)</td></tr>
<tr><td colspan="3">The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:</td></tr>
<tr><td>Inner packagings and arrangements
Bags
paper, multiwall, water resistant
plastics
woven plastics
Receptacles
fibreboard
metal
plastics
wood</td><td>Intermediate packagings and arrangements
Bags
paper, multiwall, water resistant with inner lining
plastics
Receptacles
metal
plastics</td><td>Outer packagings and arrangements
Boxes
steel (4A)
natural wood, ordinary (4C1)
natural wood, sift-proof (4C2)
plywood (4D)
reconstituted wood (4F)
fibreboard (4G)
plastics, rigid (4H2)
Drums
steel, removable head (1A2)
aluminium, removable head (1B2)
fibreboard (1G)</td></tr>
<tr><td colspan="3">Additional requirements:
1. Inner packagings are not required if drums are used as the outer packaging.
2. The packaging shall be sift-proof.</td></tr>
<tr><td colspan="3">Special packing provisions:
PP26 For UN Nos. 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings shall be lead free.
PP46 For UN No. 0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state and a maximum net mass of 30 kg.
PP48 For UN No. 0504, metal packagings shall not be used.</td></tr>
</table>

P113	PACKING INSTRUCTION	**P113**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags papier plastics textile, rubberized *Receptacles* fibreboard metal plastics wood	Not necessary	*Boxes* steel (4A) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G)
Additional requirement: The packaging shall be sift-proof.		
Special packing provisions: **PP49** For UN Nos. 0094 and 0305, no more than 50 g of substance shall be packed in an inner packaging. **PP50** For UN No. 0027, inner packagings are not necessary when drums are used as outer packagings. **PP51** For UN No. 0028, paper kraft or waxed paper sheets may be used as inner packagings.		

P114(a)	PACKING INSTRUCTION (Solid wetted)	**P114(a)**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics textile woven plastics *Receptacles* metal plastics	*Bags* plastics textile, plastic coated or lined *Receptacles* metal plastics	*Boxes* steel (4A) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Additional requirement: Intermediate packagings are not required if leakproof removable head drums are used as outer packagings.		
Special packing provisions: **PP26** For UN Nos. 0077, 0132, 0234, 0235 and 0236, packagings shall be lead free. **PP43** For UN No. 0342, inner packagings are not required when metal (1A2 or 1B2) or plastics (1H2) drums are used as outer packagings.		

P114(b)	PACKING INSTRUCTION (Solid dry)	P114(b)
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, kraft plastics textile, sift-proof woven plastics, sift-proof *Receptacles* Fibreboard metal paper plastics woven plastics, sift-proof	Not necessary	*Boxes* natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Special packing provisions: **PP26** For UN Nos. 0077, 0132, 0234, 0235 and 0236, packagings shall be lead free. **PP50** For UN Nos. 0160 and 0161, inner packagings are not required if drums are used as outer packagings. **PP52** For UN Nos. 0160 and 0161, when metal drums (1A2 or 1B2) are used as outer packagings, metal packagings shall be so constructed that the risk of explosion, by reason of increased internal pressure from internal or external causes is prevented.		

P115	PACKING INSTRUCTION	**P115**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Receptacles plastics	*Bags* plastics in metal receptacles *Drums* metal	*Boxes* natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G)

Special packing provisions:

PP45 For UN No. 0144, intermediate packagings are not required.

PP53 For UN Nos. 0075, 0143, 0495 and 0497, when boxes are used as outer packagings, inner packagings shall have taped screw cap closures and be not more than 5 litres capacity each. Inner packagings shall be surrounded with non-combustible absorbent cushioning materials. The amount of absorbent cushioning material shall be sufficient to absorb the liquid contents. Metal receptacles shall be cushioned from each other. Net mass of propellant is limited to 30 kg for each package when outer packagings are boxes.

PP54 For UN Nos. 0075, 0143, 0495 and 0497, when drums are used as outer packagings and when intermediate packagings are drums, they shall be surrounded with non-combustible cushioning material in a quantity sufficient to absorb the liquid contents. A composite packaging consisting of a plastics receptacle in a metal drum may be used instead of the inner and intermediate packagings. The net volume of propellant in each package shall not exceed 120 litres.

PP55 For UN No. 0144, absorbent cushioning material shall be inserted.

PP56 For UN No. 0144, metal receptacles may be used as inner packagings.

PP57 For UN Nos. 0075, 0143, 0495 and 0497, bags shall be used as intermediate packagings when boxes are used as outer packagings.

PP58 For UN Nos. 0075, 0143, 0495 and 0497, drums shall be used as intermediate packagings when drums are used as outer packagings.

PP59 For UN No. 0144, fibreboard boxes (4G) may be used as outer packagings.

PP60 For UN No. 0144, aluminium drums, removable head (1B2) shall not be used.

P116	PACKING INSTRUCTION	**P116**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, water and oil resistant plastics textile, plastic coated or lined of binnenzak van kunststof woven plastics, sift-proof *Receptacles* fibreboard, water resistant metal plastics wood, sift-proof *Sheets* paper, water resistant paper, waxed plastics	Not necessary	*Bags* woven plastics (5H1) paper, multiwall, water resistant (5M2) plastics, film (5H4) textile, sift-proof (5L2) textile, water resistant (5L3) *Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2) *Jerricans* steel, removable head (3A2) plastics, removable head (3H2)

Special packing provisions:

PP61 For UN Nos. 0082, 0241, 0331 and 0332, inner packagings are not required if leakproof removable head drums are used as outer packagings.

PP62 For UN Nos. 0082, 0241, 0331 and 0332, inner packagings are not required when the explosive is contained in a material impervious to liquid.

PP63 For UN No. 0081, inner packagings are not required when contained in rigid plastic which is impervious to nitric esters.

PP64 For UN No. 0331, inner packagings are not required when bags (5H2), (5H3) or (5H4) are used as outer packagings.

PP65 For UN Nos. 0082, 0241, 0331 and 0332, bags (5H2 or 5H3) may be used as outer packagings.

PP66 For UN No. 0081, bags shall not be used as outer packagings.

P130	PACKING INSTRUCTION	**P130**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Not necessary	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)
Special packing provision: **PP67** The following applies to UN Nos. 0006, 0009, 0010, 0015, 0016, 0018, 0019, 0034, 0035, 0038, 0039, 0048, 0056, 0137, 0138, 0168, 0169, 0171, 0181, 0182, 0183, 0186, 0221, 0243, 0244, 0245, 0246, 0254, 0280, 0281, 0286, 0287, 0297, 0299, 0300, 0301, 0303, 0321, 0328, 0329, 0344, 0345, 0346, 0347, 0362, 0363, 0370, 0412, 0424, 0425, 0434, 0435, 0436, 0437, 0438, 0451, 0488 and 0502: Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged. When such articles have propelling charges or are self-propelled, their ignition systems shall be protected against stimuli encountered during normal conditions of carriage. A negative result in Test Series 4 on an unpackaged article indicates that the article can be considered for carriage unpackaged. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling devices.		

P131	PACKING INSTRUCTION	**P131**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper plastics *Receptacles* fibreboard metal plastics wood *Reels*	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)
Special packing provision: **PP68** For UN Nos. 0029, 0267 and 0455, bags and reels shall not be used as inner packagings.		

P132(a)	PACKING INSTRUCTION (Articles consisting of closed metal, plastics or fibreboard casings that contain a detonating explosive, or consisting of plastics-bonded detonating explosives)	**P132(a)**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Not necessary	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2)

P132(b)	PACKING INSTRUCTION (Articles without closed casings)	**P132(b)**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Receptacles fibreboard metal plastics *Sheets* paper plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2)

P133	PACKING INSTRUCTION	**P133**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Receptacles fibreboard metal plastics wood *Trays, fitted with dividing partitions* fibreboard plastics wood	*Receptacles* fibreboard metal plastics wood	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, solid (4H2)
Additional requirement: Receptacles are only required as intermediate packagings when the inner packagings are trays.		
Special packing provision: **PP69** For UN Nos. 0043, 0212, 0225, 0268 and 0306, trays shall not be used as inner packagings.		

P134	PACKING INSTRUCTION	**P134**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags water resistant *Receptacles* fibreboard metal plastics wood *Sheets* fibreboard, corrugated *Tubes* fibreboard	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2)

P135	PACKING INSTRUCTION	P135
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper plastics *Receptacles* fibreboard metal plastics wood *Sheets* paper plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, expanded (4H1) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)

P136	PACKING INSTRUCTION	P136
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics textile *Receptacles* fibreboard plastics wood *Dividing partitions in the outer packagings*	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)

P137	PACKING INSTRUCTION	**P137**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics *Boxes* fibreboard *Tubes* fibreboard metal plastics *Dividing partitions in the outer packagings*	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Special packing provision: **PP70** For UN Nos. 0059, 0439, 0440 and 0441, when the shaped charges are packed singly, the conical cavity shall face downwards and the package marked 'THIS SIDE UP'. When the shaped charges are packed in pairs, the conical cavities shall face inwards to minimize the jetting effect in the event of accidental initiation.		

P138	PACKING INSTRUCTION	**P138**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2)
Additional requirement: If the ends of the articles are sealed, inner packagings are not necessary.		

P139	PACKING INSTRUCTION	**P139**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics *Receptacles* fibreboard metal plastics wood *Reels* *Sheets* paper plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Special packing provisions: **PP71** For UN Nos. 0065, 0102, 0104, 0289 and 0290, the ends of the detonating cord shall be sealed, for example, by a plug firmly fixed so that the explosive cannot escape. The ends of flexible detonating cord shall be fastened securely. **PP72** For UN Nos. 0065 and 0289, inner packagings are not required when they are in coils.		

P140	PACKING INSTRUCTION	**P140**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags plastics *Reels* *Sheets* paper, kraft plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G)
Special packing provisions: **PP73** For UN No. 0105, no inner packagings are required if the ends are sealed. **PP74** For UN No. 0101, the packaging shall be sift-proof except when the fuse is covered by a paper tube and both ends of the tube are covered with removable caps. **PP75** For UN No. 0101, steel or aluminium boxes or drums shall not be used.		

P141	PACKING INSTRUCTION	**P141**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Receptacles fibreboard metal plastics wood *Trays, fitted with dividing partitions* plastics wood *Dividing partitions in the outer packagings*	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)

P142	PACKING INSTRUCTION	**P142**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper plastics *Receptacles* fibreboard metal plastics wood *Sheets* paper *Trays, fitted with dividing partitions* plastics	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) fibreboard (1G) plastics, removable head (1H2)

P143	PACKING INSTRUCTION	**P143**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Bags paper, kraft plastics textile textile, rubberized *Receptacles* fibreboard metal plastics *Trays, fitted with dividing partitions* plastics wood	Not necessary	*Boxes* steel (4A) aluminium (4B) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, rigid (4H2) *Drums* steel, removable head (1A2) aluminium, removable head (1B2) plywood (1D) fibreboard (1G) plastics, removable head (1H2)
Additional requirement: Instead of the above inner and outer packagings, composite packagings (6HH2) (plastics receptacle with outer rigid plastics box) may be used. Special packing provision:		
Special packing provision: **PP76** For UN Nos. 0271, 0272, 0415 and 0491, when metal packagings are used, metal packagings shall be so constructed that the risk of explosion, by reason of increase in internal pressure from internal or external causes is prevented.		

P144	PACKING INSTRUCTION	**P144**
The following packagings are authorized, provided the general packing provisions of 4.1.1, 4.1.3 and special packing provisions of 4.1.5 are met:		
Inner packagings and arrangements	Intermediate packagings and arrangements	Outer packagings and arrangements
Receptacles fibreboard metal plastics *Dividing partitions in the outer packagings*	Not necessary	*Boxes* steel (4A) aluminium (4B) plastics natural wood, ordinary (4C1) with metal liner plywood (4D) with metal liner reconstituted wood (4F) with metal liner plastics, expanded (4H1)
Special packing provision: **PP77** For UN Nos. 0248 and 0249, packagings shall be protected against the ingress of water. When water-activated contrivances are carried unpackaged, they shall be provided with at least two independent protective features which prevent the ingress of water.		

P200	PACKING INSTRUCTION	P200

Type of packagings: Cylinders, tubes, pressure drums and bundles of cylinders

Cylinders, tubes, pressure drums and bundles of cylinders are authorised provided the special packing provisions of 4.1.6 and the provisions listed below under A, B, C and D are met:

A. *General*

(1) Receptacles shall be so closed and leakproof as to prevent escape of the gases;

B. *Test pressure and filling ratios*

(2) The minimum test pressure required is 1 MPa (10 bar);

(3) For compressed gases having a critical temperature below −50 °C the internal pressure (test pressure) to be applied in the hydraulic pressure test shall be at least one and one-half times the filling pressure at 15 °C;

(4) For compressed gases having a critical temperature of −50 °C or above and for liquefied gases having a critical temperature below 70 °C, the degree of filling shall be such that the internal pressure at 65 °C does not exceed the test pressure of the receptacles;

For gases and gas mixtures with insufficient data, the maximum filling degree (FD) shall be determined as follows:

$$FD = 8{,}5 \times 10^{-4} \times d_g \times P_e$$

where FD = maximum filling degree (in $kg \cdot l^{-1}$)

d_g = gas density (at 15 °C, 1 bar) (in kg/m^3)

P_e = minimum test pressure (in bar)

If the density of the gas is unknown, the maximum filling degree shall be determined as follows:

$$FD = \frac{P_e \text{ x MM x } 10^{-3}}{\text{R x } 338}$$

where FD = maximum filling degree (in $kg \cdot l^{-1}$)

P_e = minimum test pressure (in bar)

MM = molecular mass (in $g \cdot mol^{-1}$)

R = $8{,}31451 \cdot 10^{-2}$ bar $\cdot$ l $\cdot$ $mol^{-1} \cdot K^{-1}$ (gas constant)

(For gas mixtures the average molecular mass is to be taken, taking into account the concentrations of the various components);

(5) For liquefied gases having a critical temperature of 70 °C or above, the maximum mass of contents per litre of capacity (degree of filling) equals 0,95 times the density of the liquid phase at 50 °C (in kg/l); in addition, the vapour phase shall not disappear below 60 °C. The test pressure will be at least equal to the vapour pressure of the liquid at 70 °C, minus 100 kPa (1 bar).

For pure gases with insufficient data the maximum filling degree shall be determined as follows:

$$FD = (0{,}0032 \times BP - 0{,}24) \times d_1$$

where FD = maximum filling degree (in $kg \cdot l^{-1}$)

BP = boiling point (in Kelvin)

d_1 = density of the liquid at boiling point (in $kg \cdot l^{-1}$)

(6) For UN 1001 acetylene, dissolved, once equilibrium has been achieved at 15 °C, the filling pressure shall not exceed the value prescribed by the competent authority for the porous mass. The quantity of solvent and the quantity of acetylene shall likewise correspond to the figures specified in the approval;

(7) Other test pressures and degrees of filling may be used provided they satisfy the general requirements outlined in the previous paragraphs of this section B;

P200	PACKING INSTRUCTION *(cont'd)*	P200

C. *Periodic inspections*

(8) Refillable receptacles shall be subjected to periodic inspections in accordance with the provisions of 6.2.1.6;

(9) If special requirements for certain substances do not appear in the table below, periodic inspections shall be carried out:

(a) Every 3 years in the case of receptacles intended for the carriage of gases of classification codes 1TC, 1TFC, 1TOC, 2TC, 2TFC and 2TOC;

(b) Every 5 years in the case of receptacles intended for the carriage of gases of classification codes 1T, 1TF, 1TO, 2T, 2TF and 2TO and gases of classification codes 4A, 4F and 4C;

(c) Every 10 years in the case of receptacles intended for the carriage of gases of classification codes 1A, 1O, 1F, 2A, 2O and 2F.

By derogation from this paragraph, the periodic inspection of receptacles which make use of composite materials (composite receptacles) shall be carried out at intervals determined by the competent authority of the Member State which has approved the technical code for the design and construction;

D. *Table*

(10) The following table:

— identifies what types of receptacles are authorised for what gases;

— identifies the test pressure, degree of filling and limitation of capacity for the different gases, as well as restrictions concerning toxic gases with a LC_{50} less than 200 ppm;

— refers to additional requirements that are substance specific;

(11) Keys for the column 'receptacles'

(1) Cylinders;

(2) Tubes;

(3) Pressure drums;

(5) Bundles of cylinders;

(12) Keys for the column 'Special requirements':

a: Aluminium alloys not allowed in contact with gas.

b: Valves made of copper are not accepted.

c: Metal parts in contact with the contents may not contain more than 70 % copper.

d: No receptacle may contain more than 5 kg of the substance.

e: The valve outlets shall be fitted with plugs or cap-nuts ensuring gas-tightness.

f: The necessary steps to prevent dangerous reactions (e.g. polymerisation, decomposition…) during carriage shall be taken. If necessary, stabilisation or addition of an inhibitor is required.

g: The use of test pressures other than those indicated are allowed provided the provisions of P200(4) are followed.

h: If a monolithic material is used as a porous mass, the interval between inspections may be extended to 10 years.

i: Maximum filling according to the figures specified in the approval.

j: The test pressure and degree of filling shall be calculated in accordance with the provisions of P200 (3), (4) or (5).

k: The interval between tests may be extended to 10 years when receptacles are made of aluminium alloys.

l: Each cylinder in a frame (bundle) shall be fitted with an individual valve that shall be closed during carriage.

P200	PACKING INSTRUCTION *(cont'd)*	P200

m: The interval between inspections for steel cylinders may be extended to 15 years:

(a) with the agreement of the competent authority (authorities) of the country (countries) where the periodic inspection and the carriage take place; and

(b) in accordance with the requirements of a technical code or a standard recognised by the competent authority, or standard EN 1440:1996 'Transportable refillable welded cylinders for liquefied petroleum gas (LPG) — Periodic requalification'.

n: (1) allowed for carriage in capsules under the following conditions:

(a) The mass of gas shall not exceed 150 g per capsule;

(b) The capsules shall be free from faults liable to impair the strength;

(c) The leakproofness of the closure shall be ensured by an additional device (cap, crown, seal, binding, etc.) capable of preventing any leakage of the closure during carriage;

(d) The capsules shall be placed in an outer packaging of sufficient strength. A package shall not weigh more than 75 kg.

(2) not allowed for carriage in capsules:

(a) methylsilane or mixtures thereof, assigned to UN No. 3161;

(b) dimethylsilane, trimethylsilane or mixtures thereof, assigned to UN No. 3309;

(c) mixtures of UN No. 1589 cyanogen chloride, UN No. 2188 arsine, UN No. 2189 dichlorosilane or UN No. 2202 hydrogen selenide.

z: In the case of receptacles for the carriage of gases under a N.O.S entry, the following requirements shall be taken into account as applicable:

(1) The materials of which the receptacles and their closures are made shall not be liable to attack by the contents or form harmful or dangerous compounds therewith;

(2) The special requirements of each component shall be taken into account when selecting and filling the receptacles;

(3) The test pressure and degree of filling is to be calculated in accordance with the requirements of P200 (3), (4) or (5);

(4) Toxic gases and gas mixtures with a LC_{50} less than 200 ppm are not allowed for carriage in tubes and pressure drums;

(5) The valves of receptacles for toxic gases and gas mixtures with a LC_{50} less than 200 ppm or of pyrophoric gases or flammable mixtures of gases containing more than 1 % of pyrophoric compounds shall be fitted with gas tight plugs or cap-nuts. When these receptacles are manifolded in a bundle, each of them shall be fitted with an individual valve that shall be closed during carriage;

(6) The necessary steps to prevent dangerous reactions (e.g. polymerisation, decomposition) during carriage shall be taken. If necessary, stabilisation or addition of an inhibitor is required;

E. *Reference to standards*

(13) The applicable requirements of this Packing Instruction are considered to have been complied with if the following standards, as relevant, are applied:

Applicable requirements	Reference	Title of document
P200 (6)	EN 1801:1998	Transportable gas cylinders — Filling conditions for single acetylene cylinders (including list of permissible porous masses)
P200 (6)	EN 12755:2000	Transportable gas cylinders — Filling conditions for acetylene bundles

P200		PACKING INSTRUCTION *(cont'd)*							P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
			Type of Receptacle	Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
				X Fill. Press	MPa			
1001	ACETYLENE, DISSOLVED	4 F	(1),(5)		6,0	5		c, h, i
1002	AIR, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1005	AMMONIA, ANHYDROUS	2TC	(1),(2),(3),(5)		3,3	5	0,53	b, n
1006	ARGON, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1008	BORON TRIFLUORIDE COMPRESSED	1TC	(1),(2),(3),(5)		22,5	3	0,715	g
			(1),(2),(3),(5)		30,0	3	0,86	g
1009	BROMOTRIFLUOROME-THANE (REFRIGERANT GAS R13B1)	2A	(1),(2),(3),(5)		4,2	10	1,13	g, n
			(1),(2),(3),(5)		12,0	10	1,44	g, n
			(1),(2),(3),(5)		25,0	10	1,60	g, n
1010	1,2-BUTADIENE, INHIBITED, or	2 F	(1),(2),(3),(5)		1,0	10	0,59	f, n
	1,3-BUTADIENE, INHIBITED, or		(1),(2),(3),(5)		1,0	10	0,55	f, n
	MIXTURES OF 1,3-BUTADIENE AND HYDROCARBONS, INHIBITED		(1),(2),(3),(5)		1,0	10	0,55	f, n
1011	BUTANE	2F	(1),(2),(3),(5)		1,0	10	0,51	n
1012	BUTYLENES MIXTURE or	2F	(1),(2),(3),(5)		1,0	10	0,5	j, n
	1-BUTYLENE or		(1),(2),(3),(5)		1,0	10	0,53	
	CIS-2-BUTENE or		(1),(2),(3),(5)		1,0	10	0,55	
	TRANS-2-BUTYLENE		(1),(2),(3),(5)		1,0	10	0,54	
1013	CARBON DIOXIDE	2A	(1),(2),(3),(5)		19,0	10	0,66	g, n
			(1),(2),(3),(5)		25,0	10	0,75	g, n
1014	CARBON DIOXIDE AND OXYGEN MIXTURE, COMPRESSED	1 O	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1015	CARBON DIOXIDE AND NITROUS OXIDE MIXTURE	2A	(1),(3),(5)		25,0	10	0,75	g, n
1016	CARBON MONOXIDE COMPRESSED	1 TF	(1),(2),(3),(5)	1,5		5	2/3 P_e	k
1017	CHLORINE	2 TC	(1),(2),(3),(5)		2,2	5	1,25	a, n
1018	CHLORODIFLUORO-ME-THANE (REFRIGERANT GAS R22)	2A	(1),(2),(3),(5)		2,9	10	1,03	n
1020	CHLOROPENTAFLUORO-ETHANE (REFRIGERANT GAS R 115)	2A	(1),(2),(3),(5)		2,5	10	1,08	n
1021	1-CHLORO-1,2,2,2-TETRA-FLUOROETHANE (REFRIGERANT GAS R124)	2A	(1),(2),(3),(5)		1,2	10	1,2	n
1022	CHLOROTRIFLUORO-METHANE (REFRIGERANT GAS R13)	2A	(1),(2),(3),(5)		10,0	10	0,83	g, n
			(1),(2),(3),(5)		12,0	10	0,90	g, n
			(1),(2),(3),(5)		19,0	10	1,04	g, n
			(1),(2),(3),(5)		25,0	10	1,10	g, n

P200			PACKING INSTRUCTION *(cont'd)*					P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
				Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
			Type of Receptacle	X Fill. Press	MPa			
1023	COAL GAS, COMPRESSED	1 TF	(1),(2),(3),(5)	1,5		5	2/3 T.P.	
1026	CYANOGEN	2 TF	(1),(2),(3),(5)		10,0	5	0,70	k, n
1027	CYCLOPROPANE	2 F	(1),(2),(3),(5)		2,0	10	0,53	n
1028	DICHLORODIFLUORO-METHANE (REFRIGERANT GAS R12)	2A	(1),(2),(3),(5)		1,8	10	1,15	n
1029	DICHLOROFLUORO-METHANE (REFRIGERANT GAS R21)	2A	(1),(2),(3),(5)		1,0	10	1,23	n
1030	1,1-DIFLUOROETHANE (REFRIGERANT GAS R152a)	2 F	(1),(2),(3),(5)		1,8	10	0,79	n
1032	DIMETHYLAMINE, ANHYDROUS	2 F	(1),(2),(3),(5)		1,0	10	0,59	b, n
1033	DIMETHYL ETHER	2 F	(1),(2),(3),(5)		1,8	10	0,58	n
1035	ETHANE	2 F	(1),(2),(3),(5)		9,5	10	0,25	g, n
			(1),(2),(3),(5)		12	10	0,29	g, n
			(1),(2),(3),(5)		30	10	0,39	g, n
1036	ETHYLAMINE	2 F	(1),(2),(3),(5)		1,0	10	0,61	b, n
1037	ETHYL CHLORIDE	2 F	(1),(2),(3),(5)		1,0	10	0,80	a, n
1039	ETHYL METHYL ETHER	2 F	(1),(2),(3),(5)		1,0	10	0,64	n
1040	ETHYLENE OXIDE ETHYLENE OXIDE WITH NITROGEN up to a total pressure of 1 MPa (10 bar) at 50 °C	2 TF	(1),(2),(3),(5)		1,5	5	0,78	f, n
1041	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 9 % ethylene oxide but not more than 87 %	2 F	(1),(2),(3),(5)		19	10	0,66	g, n
			(1),(2),(3),(5)		25	10	0,75	g, n
1045	FLUORINE, COMPRESSED	1 TOC	(1),(5)		20,0	5	2,8 MPa	a, d, e, l
1046	HELIUM, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1048	HYDROGEN BROMIDE ANHYDROUS	2 TC	(1),(2),(3),(5)		6,0	3	1,54	a, n
1049	HYDROGEN, COMPRESSED	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1050	HYDROGEN CHLORIDE, ANHYDROUS	2 TC	(1),(2),(3),(5)		10,0	3	0,30	a, g, n
			(1),(2),(3),(5)		12,0	3	0,56	a, g, n
			(1),(2),(3),(5)		15,0	3	0,67	a, g, n
			(1),(2),(3),(5)		20,0	3	0,74	a, g, n
1053	HYDROGEN SULPHIDE	2 TF	(1),(2),(3),(5)		5,5	5	0,67	k, n

P200	PACKING INSTRUCTION *(cont'd)*							P200
UN No.	Name and Description	Classification Code	Packing: Type of Receptacle	Test: Pressure (T.P.): X Fill. Press	Test: Pressure (T.P.): MPa	Test: Period (years) ([a])	Filling: Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	Special Requirements
1055	ISOBUTYLENE	2 F	(1),(2),(3),(5)		1,0	10	0,52	n
1056	KRYPTON, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1058	LIQUEFIED GASES, non-flammable, charged with nitrogen, carbon dioxide or air	2A	(1),(2),(3),(5)	1,5		10		j, n
1060	METHYLACETYLENE AND PROPADIENE MIXTURE, STABILIZED	2 F	(1),(2),(3),(5)			10		c, f, j, n
	Propadiene with 1 % to 4 % methylacetylene		(1),(2),(3),(5)		2.2	10	0,50	c, f, n
	MIXTURE P1		(1),(2),(3),(5)		3,0	10	0,49	c, f, n
	MIXTURE P2		(1),(2),(3),(5)		2,4	10	0,47	c, f, n
1061	METHYLAMINE, ANHY-DROUS	2 F	(1),(2),(3),(5)		1,3	10	0,58	b, n
1062	METHYL BROMIDE	2 T	(1),(2),(3),(5)		1,0	5	1,51	a
1063	METHYL CHLORIDE (REFRIGERANT GAS R 40)	2 F	(1),(2),(3),(5)		1,7	10	0,81	a, n
1064	METHYL MERCAPTAN	2 TF	(1),(2),(3),(5)		1,0	5	0,78	k, n
1065	NEON, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1066	NITROGEN, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1067	DINITROGEN TETROXIDE (NITROGEN DIOXIDE)	2 TOC	(1),(3),(5)		1,0	3	1,30	e, l
1069	NITROSYL CHLORIDE	2 TC	(1),(5)		1,3	3	1,10	e, l, n
1070	NITROUS OXIDE	2 O	(1),(2),(3),(5)		18,0	10	0,68	g
			(1),(2),(3),(5)		22,5	10	0,74	g
			(1),(2),(3),(5)		25,0	10	0,75	g
1071	OIL GAS, COMPRESSED	1 TF	(1),(2),(3),(5)	1,5		5	2/3 T.P.	
1072	OXYGEN, COMPRESSED	1 O	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1076	PHOSGENE	2 TC	(1),(3),(5)		2,0	3	1,23	e, l, n
1077	PROPYLENE	2 F	(1),(2),(3),(5)		3,0	10	0,43	n
1078	REFRIGERANT GAS, N.O.S.	2A	(1),(2),(3),(5)			10		n, z
	MIXTURE F1		(1),(2),(3),(5)		1,2	10	1,23	
	MIXTURE F2		(1),(2),(3),(5)		1,8	10	1,15	
	MIXTURE F3 other mixtures		(1),(2),(3),(5)		2,9	10	1,03	
1079	SULPHUR DIOXIDE	2 TC	(1),(2),(3),(5)		1,4	3	1,23	n
1080	SULPHUR HEXAFLUORIDE	2A	(1),(2),(3),(5)		7,0	10	1,04	g, n
			(1),(2),(3),(5)		14,0	10	1,33	g, n
			(1),(2),(3),(5)		16,0	10	1,37	g, n

P200	PACKING INSTRUCTION *(cont'd)*							P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
				Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
			Type of Receptacle	X Fill. Press	MPa			
1081	TETRAFLUOROETHYLENE INHIBITED	2 F	(1),(2),(3),(5)		20,0	10	0,5 MPa	f, n
1082	TRIFLUOROCHLORO-ETHYLENE, INHIBITED	2 TF	(1),(2),(3),(5)		1,9	5	1,13	f, k, n
1083	TRIMETHYLAMINE, ANHYDROUS	2 F	(1),(2),(3),(5)		1,0	10	0,56	b, n
1085	VINYL BROMIDE, INHIBITED	2 F	(1),(2),(3),(5)		1,0	10	1,37	a, f, n
1086	VINYL CHLORIDE, INHIBITED	2 F	(1),(2),(3),(5)		1,2	10	0,81	a, f, n
1087	VINYL METHYL ETHER, INHIBITED	2 F	(1),(2),(3),(5)		1,0	10	0,67	f, n
1581	CHLOROPICRIN AND METHYL BROMIDE MIXTURE	2 T	(1),(2),(3),(5)		1,0	5	1,51	a
1582	CHLOROPICRIN AND METHYL CHLORIDE MIXTURE	2 T	(1),(2),(3),(5)		1,7	5	0,81	a
1589	CYANOGEN CHLORIDE, INHIBITED	2 TC	(1),(5)		2,0	3	1,03	e, f, l
1612	HEXAETHYL TETRAPHOS-PHATE AND COMPRESSED GAS MIXTURE	1 T	(1),(2),(3),(5)	1,5		5	2/3 T.P.	
1660	NITRIC OXIDE, COMPRESSED	1 TOC	(1),(5)	1,5		3	2/3 T.P.	e, l
1741	BORON TRICHLORIDE	2 TC	(1),(2),(3),(5)		1,0	3	1,19	n
1749	CHLORINE TRIFLUORIDE	2 TOC	(1),(2),(3),(5)		3,0	3	1,40	a
1858	HEXAFLUOROPROPYLENE (REFRIGERANT GAS R1216)	2A	(1),(2),(3),(5)		2,2	10	1,11	n
1859	SILICON TETRAFLUORIDE, COMPRESSED	1 TC	(1),(2),(3),(5) (1),(2),(3),(5)		20 30	3 3	0,74 1,1	g g
1860	VINYL FLUORIDE, INHIBITED	2 F	(1),(2),(3),(5)		25,0	10	0,64	a, f, g, n
1911	DIBORANE, COMPRESSED	1 TF	(1),(5)		25,0	5	0,072	e, f, l
1912	METHYLCHLORIDE AND METHYLENE CHLORIDE MIXTURE	2 F	(1),(2),(3),(5)		1,7	10	0,81	a, n
1952	CARBON DIOXIDE AND ETHYLENE OXIDE MIXTURE with not more than 9 % ethylene oxide	2A	(1),(2),(3),(5) (1),(2),(3),(5)		19 25	10 10	0,66 0,75	n n
1953	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	1 TF	(1),(2),(3),(5)	1,5		5	2/3 T.P.	z

P200	PACKING INSTRUCTION *(cont'd)*							P200
UN No.	Name and Description	Classification Code	Packing: Type of Receptacle	Test: Pressure (T.P.) X Fill. Press	Test: Pressure (T.P.) MPa	Test: Period (years) ([a])	Filling: Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	Special Requirements
1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	z
1955	COMPRESSED GAS, TOXIC, N.O.S.	1 T	(1),(2),(3),(5)	1,5		5	2/3 T.P.	z
1956	COMPRESSED GAS, N.O.S.	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	z
1957	DEUTERIUM, COMPRESSED	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1958	DICHLOROTETRAFLUORO-ETHANE (REFRIGERANT GAS R114)	2A	(1),(2),(3),(5)		1,0	10	1,30	n
1959	1,1-DIFLUOROETHYLENE (REFRIGERANT GAS R1132a)	2 F	(1),(2),(3),(5)		25	10	0,77	g, n
1962	ETHYLENE, COMPRESSED	1 F	(1),(2),(3),(5)		22,5	10	0,34	g
			(1),(2),(3),(5)		30	10	0,37	g
1964	HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S.	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	z
1965	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	2 F	(1),(2),(3),(5)			10	([b])	m, n, z
	MIXTURE A		(1),(2),(3),(5)		1,0	10	0,50	
	MIXTURE A01		(1),(2),(3),(5)		1,5	10	0,49	
	MIXTURE A02		(1),(2),(3),(5)		1,5	10	0,48	
	MIXTURE A0		(1),(2),(3),(5)		1,5	10	0,47	
	MIXTURE A1		(1),(2),(3),(5)		2,0	10	0,46	
	MIXTURE B1		(1),(2),(3),(5)		2,5	10	0,45	
	MIXTURE B2		(1),(2),(3),(5)		2,5	10	0,44	
	MIXTURE B		(1),(2),(3),(5)		2,5	10	0,43	
	MIXTURE C		(1),(2),(3),(5)		3,0	10	0,42	
1967	INSECTICIDE GAS, TOXIC, N.O.S.	2 T	(1),(2),(3),(5)			5		z
1968	INSECTICIDE GAS, N.O.S.	2A	(1),(2),(3),(5)			10		n, z
1969	ISOBUTANE	2 F	(1),(2),(3),(5)		1,0	10	0,49	n
1971	METHANE, COMPRESSED or NATURAL GAS, COMPRESSED with high methane content	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1973	CHLORODIFLUORO-METHANE AND CHLOROPENTAFLUORO-ETHANE MIXTURE with fixed boiling point, with approximately 49 % chlorodifluoromethane (REFRIGERANT GAS R502)	2A	(1),(2),(3),(5)		3,1	10	1,05	n
1974	CHLORODIFLUOROBROMO-METHANE (R12B1)	2A	(1),(2),(3),(5)		1,0	10	1,61	n

P200	PACKING INSTRUCTION *(cont'd)*							P200
			Packing	Test			Filling	
				Pressure (T.P.)				
UN No.	Name and Description	Classification Code	Type of Receptacle	X Fill. Press	MPa	Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	Special Requirements
1975	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURE (NITRIC OXIDE AND NITROGEN DIOXIDE MIXTURE)	2 TOC	(1),(2),(3),(5)			3		e, j, l
1976	OCTAFLUOROCYCLOBUT-ANE (REFRIGERANT GAS RC318)	2A	(1),(2),(3),(5)		1,1	10	1,34	n
1978	PROPANE	2 F	(1),(2),(3),(5)		2,5	10	0,42	n
1979	RARE GASES MIXTURE, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1980	RARE GASES AND OXYGEN MIXTURE, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1981	RARE GASES AND NITROGEN MIXTURE, COMPRESSED	1A	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
1982	TETRAFLUOROMETHANE, COMPRESSED (REFRIGERANT GAS R14, COMPRESSED)	1A	(1),(2),(3),(5) (1),(2),(3),(5)		20 30	10 10	0,62 0,94	g g
1983	1-CHLORO-2,2,2-TRIFLUOROETHANE (REFRIGERANT GAS R133a)	2A	(1),(2),(3),(5)		1,0	10	1,18	n
1984	TRIFLUOROMETHANE (RE-FRIGERANT GAS R23)	2A	(1),(2),(3),(5) (1),(2),(3),(5)		19,0 25,0	10 10	0,87 0,95	g, n g, n
2034	HYDROGEN AND METHANE MIXTURE, COMPRESSED	1 F	(1),(2),(3),(5)	1,5		10	2/3 T.P.	
2035	1,1,1-TRIFLUOROETHANE (REFRIGERANT GAS R143a)	2 F	(1),(2),(3),(5)		3,5	10	0,75	n
2036	XENON, COMPRESSED	1A	(1),(2),(3),(5)		13	10	1,24	g
2044	2,2-DIMETHYLPROPANE	2 F	(1),(2),(3),(5)		1,0	10	0,53	n
2073	AMMONIA SOLUTION, relative density less than 0,88 kg/l at 15 °C	4A						
	with more than 35 % and not more than 40 % ammonia		(1),(2),(3),(5)		1,0	5	0,80	
	with more than 40 % and not more than 50 % ammonia		(1),(2),(3),(5)		1,0	5	0,77	
2188	ARSINE	2 TF	(1),(5)		4,2	5	1,10	e, l
2189	DICHLOROSILANE	2 TFC	(1),(2),(3),(5)		1	3	0,90	
2190	OXYGEN DIFLUORIDE	1 TOC	(1),(5)		20,0	3	2,8 MPa	a, d, e, l
2191	SULPHURYL FLUORIDE	2 T	(1),(2),(3),(5)		5,0	5	1,10	k
2192	GERMANE ([c])	2 TF	(1),(5)		25,0	5	1,02	e, g, l, n

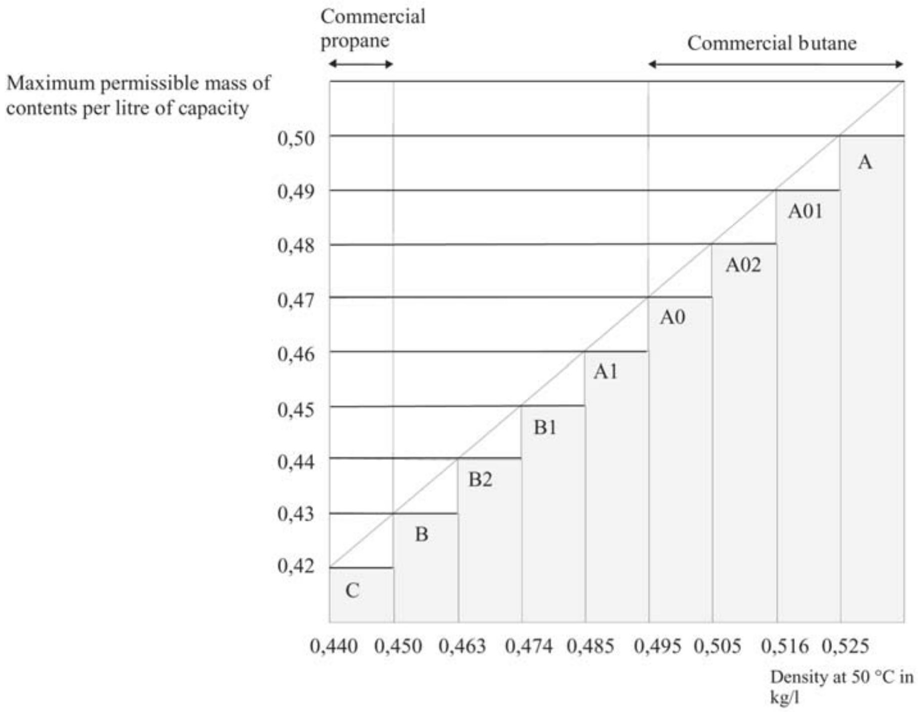
P200			PACKING INSTRUCTION *(cont'd)*					P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
				Pressure (T.P.)		Period (years) ([a])		
			Type of Receptacle	X Fill. Press	MPa		Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
2193	HEXAFLUOROETHANE, COMPRESSED (REFRIGERANT GAS R116, COMPRESSED)		(1),(2),(3),(5)		20	10	1,10	g
2194	SELENIUM HEXAFLUORIDE	2 TC	(1),(5)		3,6	3	1,46	e, g, l, n
2195	TELLURIUM HEXAFLUORIDE	2 TC	(1),(5)		2,0	3	1,0	e, l, n
2196	TUNGSTEN HEXAFLUORIDE	2 TC	(1),(5)		1,0	3	2,70	a, e, l, n
2197	HYDROGEN IODIDE, ANHYDROUS	2 TC	(1),(2),(3),(5)		2,3	3	2,25	a, n
2198	PHOSPHORUS PENTA-FLUORIDE, COMPRESSED	1 TC	(1),(5) (1),(5)		20 30	3 3	0,9 1,34	e, g, l e, g, l
2199	PHOSPHINE ([c])	2 TF	(1),(5) (1),(5)		22,5 25,0	5 3	0,30 0,51	e, g, l, n e, g, l, n
2200	PROPADIENE, INHIBITED	2 F	(1),(2),(3),(5)		2,2	10	0,50	f, n
2202	HYDROGEN SELENIDE, ANHYDROUS	2 TF	(1),(5)		3,1	5	1,60	e, l
2203	SILANE, COMPRESSED ([c])	1 F	(1),(2),(3),(5) (1),(2),(3),(5)		22,5 25,0	10 10	0,32 0,41	e, g, l e, g, l
2204	CARBONYL SULPHIDE	2 TF	(1),(2),(3),(5)		2,6	5	0,84	k, n
2417	CARBONYL FLUORIDE, COMPRESSED	1 TC	(1),(2),(3),(5) (1),(2),(3),(5)		20 30	3 3	0,47 0,7	g g
2418	SULPHUR TETRAFLUORIDE	2 TC	(1),(5)		3,0	3	0,91	e, l, n
2419	BROMOTRIFLUORO-ETHYLENE	2 F	(1),(2),(3),(5)		1,0	10	1,19	n
2420	HEXAFLUOROACETONE	2 TC	(1),(2),(3),(5)		2,2	3	1,08	n
2422	OCTAFLUOROBUT-2-ENE (REFRIGERANT GAS R1318)	2A	(1),(2),(3),(5)		1,2	10	1,34	n
2424	OCTAFLUOROPROPANE (REFRIGERANT GAS R218)	2A	(1),(2),(3),(5)		2,5	10	1,09	n
2451	NITROGEN TRIFLUORIDE	1 O	(1),(2),(3),(5) (1),(2),(3),(5)		20 30	10 10	0,5 0,75	g g
2452	ETHYLACETYLENE, INHIBITED	2 F	(1),(2),(3),(5)		1,0	10	0,57	c, f, n
2453	ETHYL FLUORIDE (REFRIGERANT GAS R161)	2 F	(1),(2),(3),(5)		3,0	10	0,57	n
2454	METHYL FLUORIDE (REFRIGERANT GAS R41)	2 F	(1),(2),(3),(5)		30,0	10	0,36	n
2517	1-CHLORO-1,1-DIFLUORO-ETHANE (REFRIGERANT GAS R142(b))	2 F	(1),(2),(3),(5)		1,0	10	0,99	n

P200			PACKING INSTRUCTION *(cont'd)*					P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
			Type of Receptacle	Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
				X Fill. Press	MPa			
2534	METHYLCHLOROSILANE	2 TFC	(1),(2),(3),(5)			3		j, n
2548	CHLORINE PENTAFLUORIDE	2 TOC	(1),(5)		1,3	3	1,49	a, e, l
2599	CHLOROTRIFLUORO-METHANE AND TRIFLUOROMETHANE, AZEOTROPIC MIXTURE with approximately 60 % chlorotrifluoromethane (REFRIGERANT GAS R503)	2A	(1),(2),(3),(5) (1),(2),(3),(5) (1),(2),(3),(5)		3,1 4,2 10,0	10 10 10	0,11 0,20 0,66	n n n
2600	CARBON MONOXIDE AND HYDROGEN MIXTURE, COMPRESSED	1 TF	(1),(2),(3),(5)	1,5		5	2/3 P_e	k
2601	CYCLOBUTANE	2 F	(1),(2),(3),(5)		1,0	10	0,63	n
2602	DICHLORODIFLUORO-METHANE AND 1,1-DIFLUOROETHANE, AZEOTROPIC MIXTURE with approximately 74 % dichlorodifluoromethane (REFRIGERANT GAS R500)	2A	(1),(2),(3),(5)		2,2	10	1,01	n
2676	STIBINE	2 TF	(1),(5)		2,0	5	1,2	e, l, n
2901	BROMINE CHLORIDE	2 TOC	(1),(2),(3),(5)		1,0	3	1,5	a
3057	TRIFLUOROACETYL CHLORIDE	2 TC	(1),(2),(3),(5)		1,7	3	1,17	n
3070	ETHYLENE OXIDE AND DICHLORODIFLUORO-METHANE MIXTURE with not more than 12,5 % ethylene oxide	2A	(1),(2),(3),(5)		1,8	10	1,09	n
3083	PERCHLORYL FLUORIDE	2TO	(1),(2),(3),(5)		3,3	5	1,21	k
3153	PERFLUORO (METHYL VINYL ETHER)	2 F	(1),(2),(3),(5)		2,0	10	0,75	n
3154	PERFLUORO (ETHYL VINYL ETHER)	2 F	(1),(2),(3),(5)		1,0	10	0,98	n
3156	COMPRESSED GAS, OXIDIZING, N.O.S.	1 O	(1),(2),(3),(5)	1,5		10	2/3 T.P.	z
3157	LIQUEFIED GAS, OXIDIZING, N.O.S.	2 O	(1),(2),(3),(5)			10		z
3159	1,1,1,2-TETRAFLUORO-ETHANE (REFRIGERANT GAS R134a)	2A	(1),(2),(3),(5)		2,2	10	1,04	n
3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	2 TF	(1),(2),(3),(5)			5		n, z
3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.	2 F	(1),(2),(3),(5)			10		n, z
3162	LIQUEFIED GAS, TOXIC, N.O.S.	2 T	(1),(2),(3),(5)			5		z
3163	LIQUEFIED GAS, N.O.S.	2A	(1),(2),(3),(5)			10		n, z

P200			PACKING INSTRUCTION *(cont'd)*					P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
			Type of Receptacle	Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
				X Fill. Press	MPa			
3220	PENTAFLUOROETHANE (REFRIGERANT GAS R125)	2A	(1),(2),(3),(5)		4,9	10	0,95	g, n
			(1),(2),(3),(5)		3,6	10	0,72	g, n
3252	DIFLUOROMETHANE (REFRIGERANT GAS R32)	2 F	(1),(2),(3),(5)		4,8	10	0,78	n
3296	HEPTAFLUOROPROPANE (REFRIGERANT GAS R227)	2A	(1),(2),(3),(5)		1,5	10	1,2	n
3297	ETHYLENE OXIDE AND CHLOROTETRAFLUORO-ETHANE MIXTURE with not more than 8,8 % ethylene oxide	2A	(1),(2),(3),(5)		1,0	10	1,16	n
3298	ETHYLENE OXIDE AND PENTAFLUOROETHANE MIXTURE with not more than 7,9 % ethylene oxide	2A	(1),(2),(3),(5)		2,6	10	1,02	n
3299	ETHYLENE OXIDE AND TETRAFLUOROETHANE MIXTURE with not more than 5,6 % ethylene oxide	2A	(1),(2),(3),(5)		1,7	10	1,03	n
3300	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 87 % ethylene oxide	2 TF	(1),(2),(3),(5)		2,8	5	0,73	f, n
3303	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	1TO	(1),(2),(3),(5)	1,5		5	2/3 T.P.	z
3304	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	1 TC	(1),(2),(3),(5)	1,5		3	2/3 T.P.	z
3305	COMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	1 TFC	(1),(2),(3),(5)	1,5		3	2/3 T.P.	z
3306	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	1 TOC	(1),(2),(3),(5)	1,5		3	2/3 T.P.	z
3307	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	2TO	(1),(2),(3),(5)			5		z
3308	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	2 TC	(1),(2),(3),(5)			3		z, n
3309	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2 TFC	(1),(2),(3),(5)			3		n, z
3310	OXIDIZING, CORROSIVE, N.O.S.	2 TOC	(1),(2),(3),(5)			3		z
3318	AMMONIA SOLUTION, relative density less than 0.880 kg/l at 15 °C in water, with more than 50 % ammonia	4 TC	(1),(2),(3),(5)			5		j

P200		PACKING INSTRUCTION *(cont'd)*						P200
UN No.	Name and Description	Classification Code	Packing	Test			Filling	Special Requirements
			Type of Receptacle	Pressure (T.P.)		Period (years) ([a])	Max. Fill. Degree kg/l or Max Fill Pressure (Mpa)	
				X Fill. Press	MPa			
3337	REFRIGERANT GAS R404A	2A	(1),(2),(3),(5)		3,5	10	0,84	n
3338	REFRIGERANT GAS R407A	2A	(1),(2),(3),(5)		3,5	10	0,95	n
3339	REFRIGERANT GAS R407B	2A	(1),(2),(3),(5)		3,7	10	0,95	n
3340	REFRIGERANT GAS R407C	2A	(1),(2),(3),(5)		3,4	10	0,95	n
3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.	2 F	(1),(2),(3),(5)			10		n, z
3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.	2 TF	(1),(2),(3),(5)			5		n, z

([a]) Not applicable for receptacles made of composite materials.
([b]) For mixtures of UN No. 1965, the maximum permissible filling mass per litre of capacity os as follows:



([c]) Considered as pyrophoric.

P201	PACKING INSTRUCTION	P201

This instruction applies to UN Nos. 3167, 3168 and 3169.

The following packagings are authorized:

(1) Compressed gas cylinders and gas receptacles conforming to the construction, testing and filling requirements approved by the competent authority;

(2) For non-toxic gases, combination packagings with hermetically sealed inner packagings of glass or metal with a maximum capacity of 5 litres per package which meet the Packing Group III performance level;

(3) For toxic gases, combination packagings with hermetically sealed inner packagings of glass or metal with a maximum capacity of 1 litre per package which meet the Packing Group III performance level.

P202	PACKING INSTRUCTION	P202

This instruction applies to UN No. 3353.

The following packagings are authorized:

Packagings conforming to the Packing Group III performance level.

Air bag inflators or modules or seat belt pretensioners may be carried unpackaged in dedicated handling devices, specially equipped covered wagons or specially equipped closed large containers when moved from where they are manufactured to an assembly plant.

Additional requirements:

1. The packaging shall be designed and constructed to prevent inadvertent operation during normal conditions of carriage.
2. The pressure vessel shall be in accordance with the requirements of the competent authority for the gas(es) contained in the pressure vessel.

P203	PACKING INSTRUCTION	P203

Type of packagings: Cryogenic receptacles

General instructions:

(1) The special packing provisions of 4.1.6 shall be met.

(2) The receptacles shall be so insulated that they cannot become coated with dew or hoar-frost.

(3) In the case of receptacles intended for the carriage of gases of classification code 3O, the material used to ensure the leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents.

Particular instructions for closed cryogenic receptacles:

(4) The receptacles shall be fitted with safety valves.

(5) For deeply refrigerated liquefied asphyxiant gases and deeply refrigerated oxidizing gases of classification codes 3A and 3O the degree of filling, at the filling temperature and at a pressure of 0,1 MPa (1 bar) shall not exceed 98 % of the capacity.

(6) For deeply refrigerated liquefied flammable gases of classification code 3F the degree of filling shall remain below the level at which, if the contents were raised to the temperature at which the vapour pressure equalled the opening pressure of the relief valve, the volume would reach 95 % of the capacity at that temperature.

(7) Receptacles shall be subjected to periodic inspections in accordance with the provisions of 6.2.1.6.

(8) Periodic inspections shall be carried out every 10 years.

By derogation from this date, the periodic inspection of receptacles which make use of composite materials (composite receptacles) shall be carried out at intervals determined by the competent authority of the Member State which has approved the technical code for the design and construction.

Particular instructions for open cryogenic receptacles:

(9) Open cryogenic receptacles are not allowed for flammable deeply refrigerated liquefied gases of classification code 3F, and UN No. 2187 carbon dioxide, deeply refrigerated liquid and its mixtures.

(10) The receptacles shall be equipped with devices which prevent the liquid from splashing out.

(11) Glass receptacles shall be double-walled vacuum insulated and surrounded by an absorbent insulating material; they shall be protected by iron-wire baskets and placed in metal cases. The metal cases for the glass receptacles and the other receptacles shall be fitted with means of handling.

(12) The openings of the receptacles shall be fitted with devices allowing gases to escape, preventing any splashing out of the liquid, and so fixed that they cannot fall out.

(13) In the case of UN No. 1073 oxygen refrigerated liquid and mixtures thereof, the devices referred to above and the absorbent insulating material surrounding the glass receptacles shall be made of incombustible materials.

Reference to standards (reserved)

P204	PACKING INSTRUCTION	**P204**

This packing instruction applies to UN No. 1950 aerosols and UN No. 2037 receptacles, small, containing gas (gas cartridges)

(1) The special packing provisions of 4.1.6 shall be met when applicable.

(2) The articles shall be so closed and leakproof as to prevent escape of the gases.

(3) For UN No. 1950 aerosols and UN No. 2037 receptacles, small, containing gas (gas cartridges):

(a) the internal pressure at 50 °C shall exceed neither two-thirds of the test pressure nor 1,32 MPa (13,2 bar).

(b) they shall be so filled that at 50 °C the liquid phase does not exceed 95 % of their capacity.

(c) they shall satisfy a tightness (leakproofness) test in a hot-water bath:

— The temperature of the bath and the duration of the test shall be such that the internal pressure of each receptacle reaches at least 90 % of the internal pressure that would be reached at 55 °C;

— However, if the contents are sensitive to heat or if the receptacles are made of a plastics material which softens at this temperature, the temperature of the bath shall be from 20 °C to 30 °C; in addition, one receptacle out of every 2000 shall be tested at the temperature prescribed in the foregoing indent;

— No leakage or permanent deformation shall occur. The provision concerning permanent deformation is not applicable to receptacles which, being made of plastics material, soften.

The requirements of instruction P204(3)(c) are deemed to be met if the following standards are complied with:

— for aerosol dispensers (UN No. 1950 aerosols):

Annex to Council Directive 75/324/EEC ([1]) as amended by Commission Directive 94/1/EC2 ([2]);

— for UN No. 2037 gas cartridges containing UN No. 1965 hydrocarbon gas mixture, liquefied:

EN 417:1992 Non-refillable metallic gas cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliances — Construction, inspection, testing and marking.

(4) For UN No. 1950 aerosols, only non-pyrophoric and non-toxic gases may be used as propellants, as constituents of propellants, or as filler gases.

All compressed and liquefied gases, except the pyrophoric gases and very toxic gases (gases with an LC_{50} lower than 200 ppm), shall be accepted as filling gases for UN No. 2037 gas cartridges.

(6) Aerosols and gas cartridges shall be placed in wooden boxes or strong fibreboard or metal boxes; UN No. 1950 aerosols made of glass or synthetic material and liable to shatter shall be separated from one another by interposed sheets of fibreboard or of another suitable material.

(7) A package shall not weigh more than 50 kg if fibreboard boxes are used or more than 75 kg if other packagings are used.

(8) In the case of carriage by wagon load or full wagon load, metal articles may also be packed as follows: the articles shall be grouped together in units on trays and held in position with an appropriate plastics cover; these units shall be stacked and suitably secured on pallets.

([1]) Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States (of the European Communities) concerning packagings for aerosols, published in the Official Journal of the European Communities OJ L147, 9.6.1975.
([2]) Commission Directive 94/1/EC of 6 January 1994 to align with Directive 75/324/EEC on the approximation of the laws of the Member States (of the European Union) concerning aerosol packagings to technical progress, published in the Official Journal of the European Communities OJ L 23, 28.1.1994.

P205	PACKING INSTRUCTION	**P205**
This packing instruction applies to UN No. 1057 lighters or lighter refills (1) The special packing provisions of 4.1.6 shall be met when applicable. (2) The articles shall comply with the provisions of the country in which they were filled. (3) Lighters and lighter refills shall be provided with protection against inadvertent discharge. (4) The liquid portion of the gas shall not exceed 85 % of the capacity of the receptacle at 15 °C. (5) The receptacles, including the closures, shall be capable of withstanding an internal pressure of the liquefied petroleum gas at 55 °C. (6) The valve mechanisms and ignition devices shall be securely sealed, taped or otherwise fastened or designed to prevent operation or leakage of the contents during carriage. (7) The lighters or lighter refills shall be tightly packed to prevent inadvertent operation of the release devices. (8) Lighters shall contain not more than 10 g of liquefied petroleum gas. Lighter refills shall contain not more than 65g of liquefied petroleum gas. (9) The lighters and lighter refills shall be packed in strong outer packagings conforming to 6.1.4 consisting of natural wood boxes (4C1, 4C2), plywood boxes (4D) or reconstituted wood boxes (4F) with a maximum gross mass of 75 kg, or fibreboard boxes (4G) with a maximum gross mass of 40 kg. The packagings shall be tested and approved in accordance with Chapter 6.1 for Packing Group II. Nevertheless, if these packagings have a maximum gross mass of not more than 2 kg, compliance with the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.5 to 4.1.1.7 will suffice.		

P206	PACKING INSTRUCTION	**P206**
This packing instruction applies to UN No. 3150 devices, small, hydrocarbon gas powered, with release device or hydrocarbon gas refills for small devices, with release device		
(1) The special packing provisions of 4.1.6 when applicable shall be met. (2) The articles shall comply with the provisions of the country in which they were filled. (3) The devices and refills shall be packed in outer packagings conforming to 6.1.4 tested and approved in accordance with Chapter 6.1 for Packing Group II.		

P300	PACKING INSTRUCTION	**P300**
This instruction applies to UN No. 3064.		
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met: Combination packagings consisting of inner metal cans of not more than 1 litre capacity each and outer wooden boxes (4C1, 4C2, 4D or 4F) containing not more than 5 litres of solution.		
Additional requirements: 1. Metal cans shall be completely surrounded with absorbent cushioning material. 2. Wooden boxes shall be completely lined with suitable material impervious to water and nitroglycerin.		

P301	PACKING INSTRUCTION	**P301**

This instruction applies to UN No. 3165.

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

(1) Aluminium pressure vessel made from tubing and having welded heads.

Primary containment of the fuel within this vessel shall consist of a welded aluminium bladder having a maximum internal volume of 46 litres.

The outer vessel shall have a minimum design gauge pressure of 1 275 kPa and a minimum burst gauge pressure of 2 755 kPa.

Each vessel shall be leak checked during manufacture and before dispatch and shall be found leakproof.

The complete inner unit shall be securely packed in non-combustible cushioning material, such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings.

Maximum quantity of fuel per unit and package is 42 litres;

(2) Aluminium pressure vessel.

Primary containment of the fuel within this vessel shall consist of a welded vapour tight fuel compartment with an elastomeric bladder having a maximum internal volume of 46 litres.

The pressure vessel shall have a minimum design gauge pressure of 2 860 kPa and a minimum burst gauge pressure of 5 170 kPa.

Each vessel shall be leak-checked during manufacture and before dispatch and shall be securely packed in non-combustible cushioning material such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings.

Maximum quantity of fuel per unit and package is 42 litres.

P302	PACKING INSTRUCTION	**P302**

This instruction applies to UN No. 3269.

The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:

Combination packagings which meet the Packing Group II or III performance level according to the criteria for Class 3, applied to the base material.

The base material and the activator (organic peroxide) shall each be separately packed in inner packagings.

The components may be placed in the same outer packaging provided they will not interact dangerously in the event of a leakage.

The activator shall have a maximum quantity of 125 ml per inner packaging if liquid, and 500 grams per inner packaging if solid.

P400	PACKING INSTRUCTION	**P400**

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met (see also Table A in 4.1.4.4):

(1) Steel gas cylinders and gas receptacles, which shall comply with the appropriate requirements in Table A in 4.1.4.4. Valves shall be protected with steel valve protection caps or collars or the gas cylinders or receptacles shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders and gas receptacles shall be secured to prevent movement in the box and shall be packed and carried so that the pressure relief devices remain in the vapour space of the cylinder during normal conditions of handling and carriage;

(2) Boxes (4A, 4B, 4C1, 4C2, 4D, 4F or 4G), drums (1A2, 1B2, 1N2, 1D or 1G) or jerricans (3A2 or 3B2) enclosing hermetically sealed metal cans with inner packagings of glass or metal, with a capacity of not more than 1 litre each, having threaded closures with gaskets. Inner packagings shall be cushioned on all sides with dry, absorbent, non-combustible material in a quantity sufficient to absorb the entire contents. Inner packagings shall not be filled to more than 90 % of their capacity. Outer packagings shall have a maximum net mass of 125 kg;

(3) Steel, aluminium or metal drums (1A2, 1B2 or 1N2), jerricans (3A2 or 3B2) or boxes (4A or 4B) with a maximum net mass of 150 kg each with hermetically sealed inner metal cans not more than 4 litre capacity each, with threaded closures fitted with gaskets. Inner packagings shall be cushioned on all sides with dry, absorbent, non-combustible material in a quantity sufficient to absorb the entire contents. Each layer of inner packagings shall be separated by a dividing partition in addition to cushioning material. Inner packagings shall not be filled to more than 90 % of their capacity.

P401	PACKING INSTRUCTION	**P401**

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met (see also Table A in 4.1.4.4):

(1) Steel gas cylinders and gas receptacles, which shall comply with the appropriate requirements in Table A in 4.1.4.4. Valves shall be protected with steel valve protection caps or collars or the gas cylinders or receptacles shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders and gas receptacles shall be secured to prevent movement in the box and shall be packed and carried so that the pressure relief devices remain in the cylinder during normal conditions of handling and carriage;

(2) Combination packagings with inner packagings of glass, metal or (maximum plastics which have threaded closures net mass) surrounded in inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.

Inner packaging	Outer packaging
1 l	30 kg (maximum net mass)

P402	PACKING INSTRUCTION	**P402**

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met (see also Table A in 4.1.4.4):

(1) Steel gas cylinders and gas receptacles, which shall comply with the appropriate requirements in Table A of 4.1.4.4. Valves shall be protected with steel valve protection caps or collars or the gas cylinders or receptacles shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders and gas receptacles shall be secured to prevent movement in the box and shall be packed and carried so that the pressure relief devices remain in the vapour space of the cylinder during normal conditions of handling and carriage. Filling shall not be greater than 90 % of the capacity of the cylinder;

(2) Combination packagings with inner 10 kg (glass) 125 kg packagings of glass, metal or plastics 15 kg (metal or which have threaded closures plastics) 125 kg surrounded in inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.

Maximum net mass	
Inner packaging	Outer packaging
10 kg (glass)	125 kg
15 kg (metal or plastics)	125 kg

Special packing provision

PP78 For UN No. 3130, the openings of receptacles shall be tightly closed by means of two devices in series, one of which shall be screwed or secured in an equivalent manner.

P403	PACKING INSTRUCTION	**P403**
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:		
Combination packagings:		
Inner packagings	Outer packagings	Maximum net mass
Glass 2 kg Plastics 15 kg Metal 20 kg Inner packagings shall have threaded closures	*Drums*	
	steel (1A2)	400 kg
	aluminium (1B2)	400 kg
	metal other than steel or aluminium (1N2)	400 kg
	plastics (1H2)	400 kg
	plywood (1D)	400 kg
	fibreboard (1G)	400 kg
	Boxes	
	steel (4A)	400 kg
	aluminium (4B)	400 kg
	natural wood (4C1)	250 kg
	natural wood, sift-proof walls (4C2)	250 kg
	plywood (4D)	250 kg
	reconstituted wood (4F)	125 kg
	fibreboard (4G)	125 kg
	expanded plastics (4H1)	60 kg
	plastics (4H2)	250 kg
	Jerricans	
	steel (3A2)	120 kg
	aluminium (3B2)	120 kg
	plastics (3H2)	120 kg
Single packagings:		Maximum net mass
Drums		
steel (1A1, 1A2)		250 kg
aluminium (1B1, 1B2)		250 kg
metal other than steel or aluminium (1N1, 1N2)		250 kg
plastics (1H1, 1H2)		250 kg
Jerricans		
steel (3A1, 3A2)		120 kg
aluminium (3B1, 3B2)		120 kg
plastics (3H1, 3H2)		120 kg
Composite packagings		
plastics receptacle with outer steel or aluminium drums (6HA1 or 6HB1)		250 kg
plastics receptacle with outer fibreboard, plastics or plywood drums (6HG1, 6HH1, of 6HD1)		75 kg
plastics receptacle with outer steel or aluminium crate or box or with outer wooden, plywood, fibreboard or rigid plastics boxes (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)		75 kg
Additional requirement: Packagings shall be hermetically sealed.		

P404	PACKING INSTRUCTION	**P404**

This instruction applies to pyrophoric solids: UN Nos: 1383, 1854, 1855, 2005, 2008, 2441, 2545, 2546, 2846, 2881, 3052, 3200 and 3203.

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

(1)	Combination packagings	
	Outer packagings:	(1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4F or 4H2)
	Inner packagings:	Metal packagings with a net mass of not more than 15 kg each. Inner packagings shall be hermetically sealed and have threaded closures;
(2)	Metal packagings:	(1A1, 1A2, 1B1, 1N1, 1N2, 3A1, 3A2, 3B1 and 3B2) Maximum gross mass: 150 kg;
(3)	Composite packagings:	Plastics receptacle with outer steel or aluminium drum (6HA1 or 6HB1) Maximum gross mass: 150 kg.

P405	PACKING INSTRUCTION	**P405**

This instruction applies to UN No. 1381.

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

(1) For UN No. 1381, phosphorus, wet:

(a) Combination packagings:

Outer packagings: (4A, 4B, 4C1, 4C2, 4D or 4F)

Maximum net mass: 75 kg

Inner packagings:

(i) hermetically sealed metal cans, with a maximum net mass of 15 kg; or

(ii) glass inner packagings cushioned on all sides with dry, absorbent, noncombustible material in a quantity sufficient to absorb the entire contents with a maximum net mass of 2 kg; or

(b) Drums (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2); maximum net mass: 400 kg

Jerricans (3A1 or 3B1); maximum net mass: 120 kg.

These packagings shall be capable of passing the leakproofness test specified in 6.1.5.4 at the Packing Group II performance level;

(2) For UN No. 1381, dry phosphorus:

(a) When fused, drums (1A2, 1B2 or 1N2) with a maximum net mass of 400 kg; or

(b) In projectiles or hard cased articles when carried without Class 1 components: as specified by the competent authority.

P406	PACKING INSTRUCTION	**P406**

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

(1) Combination packagings:

outer packagings: (4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 1G, 1D, 1H2 or 3H2)

inner packagings: water-resistant packagings;

(2) Plastics, plywood or fibreboard drums (1H2, 1D or 1G) or boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G and 4H2) with a water resistant inner bag, plastics film lining or water resistant coating;

(3) Metal drums (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2), plastics drums (1H1 or 1H2), metal jerricans (3A1, 3A2, 3B1 or 3B2), plastics jerricans (3H1 or 3H2), plastics receptacle with outer steel or aluminium drums (6HA1 or 6HB1), plastics receptacle with outer fibreboard, plastics or plywood drums (6HG1, 6HH1 or 6HD1), plastics receptacle with outer steel or aluminium crate or box or with outer wooden, plywood, fibreboard or rigid plastics boxes (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2).

Additional requirements:

1. Packagings shall be designed and constructed to prevent the loss of water or alcohol content or the content of the phlegmatizer.
2. Packagings shall be so constructed and closed so as to avoid an explosive overpressure or pressure build-up of more than 300 kPa (3 bar).
3. The type of packaging and maximum permitted quantity per package are limited when this Packing Instruction is applied in accordance with special provisions 15 or 18 in 3.3.1.

Special packing provisions:

PP24 For UN No. 2852, the quantity carried shall not exceed 500 g per package.

PP25 For UN No. 1347, the quantity carried shall not exceed 15 kg per package.

PP26 For UN Nos. 1310, 1320, 1321, 1322, 1344, 1347, 1348, 1349, 1517, 2907, 3317 and 3344 packagings shall be lead free.

P407	PACKING INSTRUCTION	**P407**

This instruction applies to UN Nos. 1331, 1944, 1945 and 2254.

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

Combination packagings comprising securely closed inner packagings to prevent accidental ignition under normal conditions of carriage. The maximum net mass of the outer packagings shall not exceed 45 kg except for fibreboard boxes which shall not exceed 30 kg.

Additional requirement:

Matches shall be tightly packed.

Special packing provision:

PP27 UN No. 1331, Strike-anywhere matches shall not be packed in the same outer packaging with any other dangerous goods other than safety matches or wax Vesta matches, which shall be packed in separate inner packagings. Inner packagings shall not contain more than 700 strike-anywhere matches.

P408	PACKING INSTRUCTION	**P408**
This instruction applies to UN No. 3292.		
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met: (1) For cells: Outer packagings with sufficient cushioning material to prevent contact between cells and between cells and the internal surfaces of the outer packaging and to ensure that no dangerous movement of the cells within the outer packaging occurs during carriage. Packagings shall conform to the Packing Group II performance level. (2) For batteries: Batteries may be carried unpacked or in protective enclosures (e.g. in fully enclosed protective packagings or wooden slatted crates). The terminals shall not support the weight of other batteries or materials packed with the batteries.		
Additional requirement: Batteries shall be protected against short circuit and shall be isolated in such a manner as to prevent short circuits.		

P409	PACKING INSTRUCTION	**P409**
This instruction applies to UN Nos. 2956, 3242 and 3251.		
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met: (1) Fibreboard drum (1G) which may be fitted with a liner or coating; maximum net mass: 50 kg; (2) Combination packagings: Fibreboard box (4G) with a single inner plastic bag; maximum net mass: 50 kg; (3) Combination packagings: Fibreboard box (4G) or fibreboard drum (1G) with plastics inner packagings each containing a maximum of 5 kg; maximum net mass: 25 kg.		

P410	PACKING INSTRUCTION			**P410**
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:				
Combination packagings:				
Inner packagings		Outer packagings	Maximum net mass	
			Packing Group II	Packing Group III
Glass	10 kg	*Drums*		
Plastics ([a])	30 kg	steel (1A2)	400 kg	400 kg
Metal	40 kg	aluminium (1B2)	400 kg	400 kg
Paper ([a]), ([b])	10 kg	metal other than steel or aluminium (1N2)	400 kg	400 kg
Fibreboard ([a]), ([b])	10 kg	plastics (1H2)	400 kg	400 kg
		plywood (1D)	400 kg	400 kg
		fibreboard (1G) ([a])	400 kg	400 kg
		Boxes		
		steel (4A)	400 kg	400 kg
		aluminium (4B)	400 kg	400 kg
		natural wood (4C1)	400 kg	400 kg
		natural wood, sift-proof walls (4C2)	400 kg	400 kg
		plywood (4D)	400 kg	400 kg
		reconstituted wood (4F)	400 kg	400 kg
		fibreboard (4G) ([a])	400 kg	400 kg
		expanded plastics (4H1)	60 kg	60 kg
		rigid plastics (4H2)	400 kg	400 kg
		Jerricans		
		steel (3A2)	120 kg	120 kg
		aluminium (3B2)	120 kg	120 kg
		plastics (3H2)	120 kg	120 kg

Single packagings:

	Maximum net mass	
	Packing Group II	Packing Group III
Drums		
steel (1A1 or 1A2)	400 kg	400 kg
aluminium (1B1 or 1B2)	400 kg	400 kg
metal other than steel or aluminium (1N1 or 1N2)	400 kg	400 kg
plastics (1H1 or 1H2)	400 kg	400 kg
Jerricans		
steel (3A1 or 3A2)	120 kg	120 kg
aluminium (3B1 or 3B2)	120 kg	120 kg
plastics (3H1 or 3H2)	120 kg	120 kg
Boxes		
steel (4A) ([c])	400 kg	400 kg
aluminium (4B) ([c])	400 kg	400 kg
natural wood (4C1) ([c])	400 kg	400 kg
plywood (4D) ([c])	400 kg	400 kg
reconstituted wood (4F) ([c])	400 kg	400 kg

P410	PACKING INSTRUCTION *(cont'd)*	P410
Single packagings:		
	Maximum net mass	
	Packing Group II	Packing Group III
natural wood with sift-proof walls (4C2) ([c])	400 kg	400 kg
fibreboard (4G) ([c])	400 kg	400 kg
rigid plastics (4H2) ([c])	400 kg	400 kg
Bags		
Bags (5H3, 5H4, 5L3, 5M2) ([c]), ([d])	50 kg	50 kg
Composite packagings		
plastics receptacle with outer steel, aluminium, plywood, fibreboard or plastics drum (6HA1, 6HB1, 6HG1, 6HD1, of 6HH1)	400 kg	400 kg
plastics receptacle with outer steel or aluminium crate or box, or outer wooden, plywood, fibreboard or rigid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 of 6HH2)	75 kg	75 kg
glass receptacle with outer steel, aluminium, plywood or fibreboard drum (6PA1, 6PB1, 6PD1 or 6PG1) or outer steel or aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PD2, or 6PG2) or with outer rigid or expanded plastics packaging (6PH1 or 6PH2)	75 kg	75 kg

Special packing provisions:

PP39 For UN No. 1378, for metal packagings a venting device is required.

PP40 For UN Nos. 1326, 1352, 1358, 1395, 1396, 1436, 1437, 1871, 2805 and 3182, Packing Group II, bags are not allowed.

([a]) These packagings shall be sift-proof.
([b]) These inner packagings shall not be used when the substances being carried may become liquid.
([c]) These packagings shall not be used when the substances being carried may become liquid during carriage.
([d]) These packagings shall only be used for Packing Group II substances when carried in a covered wagon or closed container.

P411	PACKING INSTRUCTION	P411

This instruction applies to UN No. 3270.

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

(1) Fibreboard box with a maximum gross mass of 30 kg;

(2) Other packagings, provided that explosion is not possible by reason of increased internal pressure. Maximum net mass shall not exceed 30 kg.

P500	PACKING INSTRUCTION	P500

This instruction applies to UN No. 3356.

The general provisions of 4.1.1 and 4.1.3 shall be met.

Packagings shall conform to the Packing Group II performance level.

The generator(s) shall be carried in a package which meets the following requirements when one generator in the package is actuated:

(a) Other generators in the package will not be actuated;

(b) Packaging material will not ignite; and

(c) The outside surface temperature of the completed package shall not exceed 100 °C.

P501	PACKING INSTRUCTION	**P501**
This instruction applies to UN No. 2015.		
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:		

Combination packagings:	Inner packaging maximum capacity	Outer packaging maximum net mass
(1) Boxes (4A, 4B, 4C1, 4C2, 4D, 4H2) 5 l 125 kg or drums (1A2, 1B2, 1N2, 1H2, 1D) or jerricans (3A2, 3B2, 3H2) with glass, plastics or metal inner packagings	5 l	125 kg
(2) Fibreboard box (4G) or fibreboard drum (1G), with plastics or metal inner packagings each in a plastics bag	2 l	50 kg

Single packagings:	Maximum capacity
Drums	
steel (1A1)	250 l
aluminium (1B1)	250 l
metal other than steel or aluminium (1N1)	250 l
plastics (1H1)	250 l
Jerricans	
steel (3A1)	60 l
aluminium (3B1)	60 l
plastics (3H1)	60 l
Composite packagings	
plastics receptacle with outer steel or aluminium drum (6HA1, 6HB1)	250 l
plastics receptacle with outer fibreboard, plastics or plywood drum (6HG1, 6HH1, 6HD1)	250 l
plastics receptacle with outer steel or aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or rigid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)	60 l
glass receptacle with outer steel, aluminium, fibreboard, plywood, rigid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or with outer steel or aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)	60 l

Additional requirements:

1. Packagings shall have a maximum filling degree of 90 %.
2. Packagings shall be vented.

P502	PACKING INSTRUCTION	P502
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:		
Combination packagings::		
Inner packagings	**Outer packagings**	**Maximum net mass**
Glass 5 l Metal 5 l Plastics 5 l	*Drums*	
	steel (1A2)	125 kg
	aluminium (1B2)	125 kg
	metal other than steel or aluminium (1N2)	125 kg
	plastics (1H2)	125 kg
	plywood (1D)	125 kg
	fibreboard (1G)	125 kg
	Boxes	
	steel (4A)	125 kg
	aluminium (4B)	125 kg
	natural wood (4C1)	125 kg
	natural wood, sift-proof walls (4C2)	125 kg
	plywood (4D)	125 kg
	reconstituted wood (4F)	125 kg
	fibreboard (4G)	125 kg
	expanded plastics (4H1)	60 kg
	plastics (4H2)	125 kg

Single packagings:	Maximum capacity
Drums	
steel (1A1)	250 l
aluminium (1B1)	250 l
plastics (1H1)	250 l
Jerricans	
steel (3A1)	60 l
aluminium (3B1)	60 l
plastics (3H1)	60 l
Composite packagings	
plastics receptacle with outer steel or aluminium drum (6HA1, 6HB1)	250 l
plastics receptacle with outer fibreboard, plastics or plywood drum (6HG1, 6HH1, 6HD1)	250 l
plastics receptacle with outer steel or aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or rigid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)	60 l
glass receptacle with outer steel, aluminium, fibreboard, plywood, rigid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or with outer steel or aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)	60 l

Special packing provision:

PP28 For UN No. 1873, only glass inner packagings and glass inner receptacles are authorized respectively for combination packagings and composite packagings.

P503	PACKING INSTRUCTION	**P503**
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:		
Combination packagings:		
Inner packagings	Outer packagings	Maximum net mass
Glass 5 kg Metal 5 kg Plastics 5 kg	*Drums*	
	steel (1A2)	125 kg
	aluminium (1B2)	125 kg
	metal other than steel or aluminium (1N2)	125 kg
	plastics (1H2)	125 kg
	plywood (1D)	125 kg
	fibreboard (1G)	125 kg
	Boxes	
	steel (4A)	125 kg
	aluminium (4B)	125 kg
	natural wood (4C1)	125 kg
	natural wood, sift-proof walls (4C2)	125 kg
	plywood (4D)	125 kg
	reconstituted wood (4F)	125 kg
	fibreboard (4G)	125 kg
	expanded plastics (4H1)	60 kg
	plastics (4H2)	125 kg
Single packagings:		
Metal drums (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) with a maximum net mass of 250 kg. Fibreboard (1G) or plywood drums (1D) fitted with inner liners with a maximum net mass of 200 kg.		

P504	PACKING INSTRUCTION	**P504**

The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met:

Combination packagings:	Maximum net mass
(1) Glass receptacles with a maximum capacity of 5 litres in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2 outer packagings	75 kg
(2) Plastics receptacles with a maximum capacity of 30 litres in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2 outer packagings	75 kg
(3) Metal receptacles with a maximum capacity of 40 litres in 1G, 4F or 4G outer packagings	125 kg
(4) Metal receptacles with a maximum capacity of 40 litres in 1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4H2 outer packagings	225 kg
Single packagings:	**Maximum capacity**
Drums	
steel, non-removable head (1A1)	250 l
steel, removable head (1A2)	250 l
aluminium, non-removable head (1B1)	250 l
aluminium, removable head (1B2)	250 l
metal other than steel or aluminium, non-removable head (1N1)	250 l
metal other than steel or aluminium, removable head (1N2)	250 l
plastics, non-removable head (1H1)	250 l
plastics, removable head (3H2)	250 l
Jerricans	
steel, non-removable head (3A1)	60 l
steel, removable head (3A2)	60 l
aluminium, non-removable head (3B1)	60 l
aluminium, removable head (3B2)	60 l
plastics, non-removable head (3H1)	60 l
plastics, removable head (3H2)	60 l
Composite packagings:	
plastics receptacle with outer steel or aluminium drum (6HA1, 6HB1)	250 l
plastics receptacle with outer fibreboard, plastics or plywood drum (6HG1, 6HH1, 6HD1)	120 l
plastics receptacle with outer steel or aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or rigid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)	60 l
glass receptacle with outer steel, aluminium, fibreboard, plywood, rigid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or with outer steel or aluminium crate or box with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)	60 l

Special packing provisions:

PP10 For UN No. 2014 PG II and UN No. 2984 PG III, the packaging shall be vented.

PP29 For UN No. 2014, the maximum degree of filling shall be 90 %.

P520	PACKING INSTRUCTION	**P520**

This instruction applies to organic peroxides of Class 5.2 and self-reactive substances of Class 4.1.

The packagings listed below are authorized provided the general provisions of 4.1.1 and 4.1.3 and special provisions of 4.1.7.1 are met.

The packing methods are designated OP1 to OP8. The packing methods appropriate for the individual currently assigned organic peroxides and self-reactive substances are listed in 4.1.7.1.3, 2.2.41.4 and 2.2.52.4. The quantities specified for each packing method are the maximum quantities authorized per package. The following packagings are authorized:

(1) Combination packagings with outer packagings comprising boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2), drums (1A2, 1B2, 1G, 1H2 and 1D), jerricans (3A2, 3B2 and 3H2);

(2) Single packagings consisting of drums (1A1, 1A2, 1B1, 1B2, 1G, 1H1, 1H2 and 1D) and jerricans (3A1, 3A2, 3B1, 3B2, 3H1 and 3H2);

(3) Composite packagings with plastics inner receptacles (6HA1, 6HA2, 6HB1, 6HB2, 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6HH1 and 6HH2).

Maximum quantity per packaging/package ([a]) for packing methods OP1 to OP8

Packing Method / Maximum Quantity	OP1	OP2 ([a])	OP3	OP4 ([a])	OP5	OP6	OP7	OP8
Maximum mass (kg) for solids and for combination packagings (liquid and solid)	0,5	0,5/10	5	5/25	25	50	50	200 ([b])
Maximum contents in litres for liquids ([c])	0,5	—	5	—	30	60	60	225 ([d])

([a]) If two values are given, the first applies to the maximum net mass per inner packaging and the second to the maximum net mass of the complete package.
([b]) 60 kg for jerricans/100 kg for boxes.
([c]) Viscous substances shall be treated as solids when they do not meet the criteria provided in the definition for 'liquids' in 1.2.1.
([d]) 60 litres for jerricans.

Additional requirements:

1. Metal packagings, including inner packagings of combination packagings and outer packagings of combination or composite packagings may only be used for packing methods OP7 and OP8.
2. In combination packagings, glass receptacles may only be used as inner packagings with maximum contents of 0,5 kg for solids or 0,5 litre for liquids.
3. In combination packagings, cushioning materials shall not be readily combustible.
4. The packaging of an organic peroxide or self-reactive substance required to bear an 'EXPLOSIVE' subsidiary risk label (Model No. 1) shall also comply with the provisions of 4.1.5.10 and 4.1.5.11.

Special packing provisions:

PP21 For certain self-reactive substances of types B or C, UN Nos. 3221, 3222, 3223 and 3224, a smaller packaging than that allowed by packing methods OP5 or OP6 respectively shall be used (see 4.1.6 and 2.2.41.4).

PP22 UN No. 3241, 2-bromo-2-nitropropane-1,3-diol, shall be packed in accordance with packing method OP6.

P600	PACKING INSTRUCTION	**P600**

This instruction applies to UN Nos. 1700, 2016 and 2017.

The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:
Outer packagings (1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2) meeting the Packing Group II performance level. The articles shall be individually packaged and separated from each other using partitions, dividers, inner packagings or cushioning material to prevent inadvertent discharge during normal conditions of carriage.

Maximum net mass: 75 kg.

P601	PACKING INSTRUCTION	P601

The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met (see also Table A of 4.1.4.4):

(1) Combination packagings consisting of glass inner packagings not exceeding 1 litre in capacity packed with absorbent material sufficient to absorb the entire contents and inert cushioning material placed in metal receptacles which are individually packed in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings with a maximum gross mass of 15 kg. Inner packagings shall not be filled to more than 90 % of their capacity. The closure of each inner packaging shall be physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage;

(2) Combination packagings consisting of metal inner packagings or additionally, for UN No. 1744 only, in polyvinylidene fluoride (PVDF) inner packagings, not exceeding 5 litres in capacity individually packed with absorbent material sufficient to absorb the contents and inert cushioning material in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings with a maximum gross mass of 75 kg. Inner packagings shall not be filled to more than 90 % of their capacity. The closure of each inner packaging shall be physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage;

(3) Combination packagings:

Outer packagings: Plastics or steel drums, removable head (1A2 or 1H2) tested in accordance with the test requirements in 6.1.5 as combination packagings as assembled for carriage;

Inner packagings:

Drums and composite packagings (1A1, 1B1, 1N1, 1H1 or 6HA1) meeting the requirements of Chapter 6.1 for single packagings, subject to the following conditions:

(a) The hydraulic pressure test shall be conducted at a pressure of at least 300 kPa (3 bar) (gauge pressure);

(b) The design and production leakproofness tests shall be conducted at a test pressure of 30 kPa (0,3 bar);

(c) They shall be isolated from the outer drum by the use of inert shockmitigating cushioning material which surrounds the inner packaging on all sides;

(d) Their capacity shall not exceed 125 litres; and

(e) Closures shall be of a screw cap type that are:

(i) physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage; and

(ii) provided with a cap seal;

(f) The inner packaging shall be tested periodically at least every 5 years according to (a) and (b);

(g) The complete packaging shall be visually inspected to the satisfaction of the competent authority at least every 3 years;

(h) The outer and inner packaging shall bear in clearly legible and durable characters:

(i) the date (month, year) of the initial test and the latest periodic test and inspection;

(ii) The stamp of the expert who carried out the test and inspection;

(4) Gas cylinders and gas receptacles, which shall comply with the appropriate requirements of Table A of 4.1.4.4.

P602	PACKING INSTRUCTION	P602

The following packagings are authorised provided the general provisions of 4.1.1 and 4.1.3 are met:

(1) Combination packagings consisting of glass inner packagings packed with absorbent material sufficient to absorb the entire contents and inert cushioning material placed in metal receptacles which are individually packed in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings with a maximum gross mass of 50 kg. Inner packagings shall not be filled to more than 90 % of their capacity. The closure of each inner packaging shall be physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage. Inner packagings shall not exceed 1 litre in capacity;

(2) Combination packagings consisting of metal inner packagings individually packed with absorbent material sufficient to absorb the entire contents and inert cushioning material in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings with a maximum gross mass of 75 kg. Inner packagings shall not be filled to more than 90 % of their capacity. The closure of each inner packaging shall be physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage. Inner packagings shall not exceed 5 litres in capacity;

(3) Drums and composite packagings (1A1, 1B1, 1N1, 1H1 or 6HA1), subject to the following conditions:

   (a) The hydraulic pressure test shall be conducted at a pressure of at least 300 kPa (3 bar) (gauge pressure);

   (b) The design and production leakproofness tests shall be conducted at a test pressure of 30 kPa (0,3 bar); and

   (c) Closures shall be of a screw cap type that are:

      (i) physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage; and

      (ii) provided with a cap seal;

(4) Gas cylinders and gas receptacles with a minimum test pressure of 1 MPa (10 bar) (gauge pressure) conforming to the provisions of P200. No cylinder may be equipped with any pressure relief device. Gas cylinders and gas receptacles shall have their valves protected.

P620	PACKING INSTRUCTION	**P620**

This instruction applies to UN Nos. 2814 and 2900.

The following packagings are authorized provided the special packing provisions of 4.1.8 are met:

Packagings meeting the requirements of Chapter 6.3 and approved accordingly consisting of:

(a) Inner packagings comprising:

(i) leakproof primary receptacle(s);

(ii) a leakproof secondary packaging;

(iii) other than for solid infectious substances, an absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if multiple primary receptacles are placed in a single secondary packaging, they shall be individually wrapped so as to prevent contact between them;

(b) An outer packaging of adequate strength for its capacity, mass and intended use. The smallest external dimension shall be at least 100 mm.

Additional requirements:

1. Inner packagings containing infectious substances shall not be consolidated with inner packagings containing unrelated types of goods. Complete packages may be overpacked in accordance with the provisions of 1.2.1 and 5.1.2; such an overpack may contain dry ice.

2. Other than for exceptional consignments, e.g. whole organs which require special packaging, the following additional requirements shall apply:

(a) Lyophilized substances:

Primary receptacles shall be flame-sealed glass ampoules or rubberstoppered glass vials fitted with metal seals;

(b) Liquid or solid substances:

(i) Substances consigned at ambient temperatures or at a higher temperature. Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leakproof seal shall be provided, e.g. a heat seal, a skirted stopper or a metal crimp seal. If screw caps are used, they shall be reinforced with adhesive tape;

(ii) Substances consigned refrigerated or frozen. Ice, dry ice or other refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.3.1.1. Interior supports shall be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack shall be leakproof. If dry ice is used, the outer packaging or overpack shall permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used;

(iii) Substances consigned in liquid nitrogen. Plastics primary receptacles capable of withstanding very low temperature shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled in accordance with the requirements of P200. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.

3. Whatever the intended temperature of the consignment, the primary receptacle or the secondary packaging shall be capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 kPa and temperatures in the range −40 °C to +55 °C.

4. The openings of primary receptacle for liquids of UN Nos. 2814 and 2900 shall be closed so as to be leakproof by means of two devices placed in series, one of which shall be screw-threaded or secured in an equivalent manner.

P621	PACKING INSTRUCTION	**P621**
This instruction applies to UN No. 3291.		
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met: (1) Rigid, leakproof packagings meeting the requirements of Chapter 6.1 for solids, at the Packing Group II performance level, provided there is sufficient absorbent material to absorb the entire amount of liquid present and the packaging is capable of retaining liquids; (2) For packages containing larger quantities of liquid, rigid packagings meeting the requirements of Chapter 6.1 at the Packing Group II performance level for liquids.		
Additional requirements: 1. Packagings intended to contain sharp objects such as broken glass and needles shall be resistant to puncture and retain liquids under the performance test conditions in Chapter 6.1. 2. The closure of packagings shall be so constructed that they are hermetically closed after filling and so designed that any subsequent opening is immediately evident.		

P650	PACKING INSTRUCTION	**P650**
This instruction applies to diagnostic specimens		
Diagnostic specimens may be carried in either: (1) Packagings that meet the following conditions: (a) The primary receptacles do not contain more than 100 ml; (b) The outer packaging does not contain more than 500 ml; (c) The primary receptacles are leakproof; and (d) The packagings are in accordance with P620. However, it need not be subjected to the tests; or (2) Packagings that comply with standard EN 829:1996.		

P800	PACKING INSTRUCTION	P800

This instruction applies to UN Nos. 2803 and 2809.

The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:

(1) Cylinders in accordance with P200; or

(2) Steel flasks or bottles with threaded closures with a capacity not exceeding 2,5 l; or

(3) Combination packagings which conform to the following requirements:

(a) Inner packagings shall comprise glass, metal or rigid plastics intended to contain liquids with a maximum net mass of 15 kg each;

(b) The inner packagings shall be packed with sufficient cushioning material to prevent breakage;

(c) Either the inner packagings or the outer packagings shall have inner liners or bags of strong leakproof and puncture-resistant material impervious to the contents and completely surrounding the contents to prevent it from escaping from the package irrespective of its position or orientation;

(d) The following outer packagings and maximum net masses are authorized:

Outer packaging:	Maximum net mass
Drums	
steel (1A2)	400 kg
metal other than steel or aluminium (1N2)	400 kg
plastics (1H2)	400 kg
plywood (1D)	400 kg
fibreboard (1G)	400 kg
Boxes	
steel (4A)	400 kg
natural wood (4C1)	250 kg
natural wood, sift-proof walls (4C2)	250 kg
plywood (4D)	250 kg
reconstituted wood (4F)	125 kg
fibreboard (4G)	125 kg
expanded plastics (4H1)	60 kg
rigid plastics (4H2)	125 kg

Special packing provision:

PP41 For UN No. 2803, when it is necessary to carry gallium at low temperatures in order to maintain it in a completely solid state, the above packagings may be overpacked in a strong, water-resistant outer packaging which contains dry ice or other means of refrigeration. If a refrigerant is used, all of the above materials used in the packaging of gallium shall be chemically and physically resistant to the refrigerant and shall have impact resistance at the low temperatures of the refrigerant employed. If dry ice is used, the outer packaging shall permit the release of carbon dioxide gas.

P801	PACKING INSTRUCTION	**P801**
This instruction applies to new and used batteries assigned to UN Nos. 2794, 2795 or 3028.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: (1) Rigid outer packagings; (2) Wooden slatted crates; (3) Pallets.		
Additional requirements: 1. Batteries shall be protected against short circuits. 2. Batteries stacked shall be adequately secured in tiers separated by a layer of non conductive material. 3. Battery terminals shall not support the weight of other superimposed elements. 4. Batteries shall be packed or secured to prevent inadvertent movement. Any cushioning material used shall be inert.		

P801a	PACKING INSTRUCTION	**P801a**
This instruction applies to used batteries of UN Nos. 2794, 2795, 2800 and 3028.		
Stainless steel or rigid plastics battery boxes of a capacity of up to $1m^3$ are authorized provided the following provisions are met: (1) The battery boxes shall be resistant to the corrosive substances contained in the storage batteries; (2) Under normal conditions of carriage, no corrosive substance shall leak from the battery boxes and no other substance (e.g. water) shall enter the battery boxes. No dangerous residues of corrosive substances contained in the storage batteries shall adhere to the outside of the battery boxes; (3) The battery boxes shall not be loaded with storage batteries to a height greater than the height of their sides; (4) No storage battery containing substances or other dangerous goods which may react dangerously with one another shall be placed in a battery box; (5) The battery boxes shall be either: (a) covered; or (b) carried in closed or sheeted open wagons or in closed or covered containers.		

P802	PACKING INSTRUCTION	**P802**
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: (1) Combination packagings: — outer packagings: 1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4F, or 4H2; — maximum net mass: 75 kg, — Inner packagings: glass or plastics; maximum capacity: 10 litres; (2) Combination packagings: — outer packagings: 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2; — maximum net mass: 125 kg, — Inner packagings: metal; maximum capacity: 40 litres; (3) Composite packagings: Glass receptacle with outer steel, aluminium, plywood or rigid plastics drum (6PA1, 6PB1, 6PD1 or 6PH2) or with outer steel or aluminium crate or box or with outer wooden box or with outer wickerwork hamper (6PA2, 6PB2, 6PC or 6PD2); maximum capacity: 60 litres; (4) Austenitic steel drums (1A1) with a maximum capacity of 250 litres; (5) Gas cylinders conforming to the construction, testing and filling requirements approved by the competent authority.		

P803	PACKING INSTRUCTION	**P803**
This instruction applies to UN No. 2028.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: (1) Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); (2) Boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2). Maximum net mass: 75 kg. The articles shall be individually packed and separated from each other using partitions, dividers, inner packagings or cushioning material to prevent inadvertent discharge during normal conditions of carriage.		

P900	PACKING INSTRUCTION	**P900**
(Reserved)		

P901	PACKING INSTRUCTION	**P901**
This instruction applies to UN No. 3316.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: Packagings conforming to the performance level consistent with the Packing Group assigned to the kit as a whole (see 3.3.1, special provision 251). Maximum quantity of dangerous goods per outer packaging: 10 kg.		
Additional requirement: Dangerous goods in kits shall be packed in inner packagings which shall not exceed either 250 ml or 250 g and shall be protected from other materials in the kit.		

P902	PACKING INSTRUCTION	**P902**
This instruction applies to UN No. 3268.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: Packagings conforming to the Packing Group III performance level. Each packaging shall conform to special provision 235 (see 3.3.1) and shall conform to the Packing Group III performance level. The packaging shall be designed and constructed to prevent movement of the articles and inadvertent discharge during normal conditions of carriage. The articles may also be carried unpackaged in specially equipped handling devices, wagons or containers when moved from where they are manufactured to an assembly plant.		

P903	PACKING INSTRUCTION	**P903**
This instruction applies to UN Nos. 3090 and 3091.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: Packagings conforming to the Packing Group II performance level. When lithium cells and batteries are packed with equipment, they shall be packed in inner fibreboard packagings that meet the requirements for Packing Group II. When lithium cells and batteries included in Class 9 are contained in equipment, the equipment shall be packed in strong outer packagings in such a manner as to prevent accidental operation during carriage.		
Additional requirement: Batteries shall be protected against short circuit.		

P903a	PACKING INSTRUCTION	**P903a**
This instruction applies to used cells and batteries of UN Nos. 3090 and 3091.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: Packagings conforming to the Packing Group II performance level. Non-approved packagings shall, however, be permitted provided that: — they meet the general provisions of 4.1.1 and 4.1.3; — the cells and batteries are packed and stowed so as to prevent any risk of short circuits; — the packages weigh not more than 30 kg.		
Additional requirement: Batteries shall be protected against short circuit.		

P904	PACKING INSTRUCTION	**P904**
This instruction applies to UN No. 3245.		

The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:

(1) Packagings according to P001 or P002;

(2) Packagings, which need not conform to the packaging test requirements of Part 6, but conforming to the following:

(a) An inner packaging comprising:

(i) a watertight primary receptacle(s);

(ii) a watertight secondary packaging;

(iii) absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if several primary receptacles are placed in a single secondary packaging, they shall be individually wrapped so as to prevent contact between them;

(b) An outer packaging of adequate strength for its capacity, mass and intended use, and with a minimum external dimension of 100 mm;

(3) For substances consigned in liquid nitrogen: Plastics primary receptacles capable of withstanding very low temperatures shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled in accordance with the requirements of P200. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.

P905	PACKING INSTRUCTION	**P905**
This instruction applies to UN Nos. 2990 and 3072.		

Any suitable packaging is authorized, provided the general provisions of 4.1.1 and 4.1.3 are met, except that packagings need not conform to the requirements of Part 6.

When the life saving appliances are constructed to incorporate or are contained in rigid outer weatherproof casings (such as for lifeboats), they may be carried unpackaged.

Additional requirements:

1. All dangerous substances and articles contained as equipment within the appliances shall be secured to prevent inadvertent movement and in addition:

(a) Signal devices of Class 1 shall be packed in plastics or fibreboard inner packagings;

(b) Non-flammable, non-toxic gases shall be contained in cylinders as specified by the competent authority, which may be connected to the appliance;

(c) Electric storage batteries (Class 8) and lithium batteries (Class 9) shall be disconnected or electrically isolated and secured to prevent any spillage of liquid; and

(d) Small quantities of other dangerous substances (for example in Classes 3, 4.1 and 5.2) shall be packed in strong inner packagings.

2. Preparation for transport and packaging shall include provisions to prevent any accidental inflation of the appliance.

P906	PACKING INSTRUCTION	**P906**

This instruction applies to UN Nos. 2315, 3151 and 3152.

The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:

(1) For liquids and solids: Packagings in accordance with P001 or P002, as appropriate;

(2) For transformers and condensers and other devices: Leakproof packagings which are capable of containing, in addition to the devices, at least 1,25 times the volume of the liquid PCBs present in them. There shall be sufficient absorbent material in the packagings to absorb at least 1.1 times the volume of liquid which is contained in the devices. In general, transformers and condensers shall be carried in leakproof metal packagings which are capable of holding, in addition to the transformers and condensers, at least 1,25 times the volume of the liquid present in them.

Notwithstanding the above, liquids and solids not packaged in accordance with P001 and P002 and unpackaged transformers and condensers may be carried in means of transport fitted with a leakproof metal tray to a height of at least 800 mm, containing sufficient inert absorbent material to absorb at least 1,1 times the volume of any free liquid.

Additional requirement:

Adequate provisions shall be taken to seal the transformers and condensers to prevent leakage during normal conditions of carriage.

R001	PACKING INSTRUCTION	**R001**

The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:

Light gauge metal packagings	Maximum capacity/maximum net mass		
	Packing Group I	Packing Group II	Packing Group III
steel, non-removable head (0A1)	Not allowed	40 l / 50 kg	40 l / 50 kg
steel, removable head (0A2) ([a])	Not allowed	40 l / 50 kg	40 l / 50 kg

([a]) not allowed for UN No. 1261 NITROMETHANE:

NOTE 1. This instruction applies to solids and liquids, provided the design type is tested and marked appropriately.

NOTE 2. For Class 3, Packing Group II, these packagings may be used only for substances with no subsidiary risk and a vapour pressure of not more than 110 kPa at 50 °C and for slightly toxic pesticides of Class 3, Packing Group II.

Special packing provision:

RR3 For UN Nos. 1204 and 3256 light metal packagings are not authorized.

4.1.4.2. Packing instructions concerning the use of IBCs

IBC01	PACKING INSTRUCTION	IBC01
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: Metal (31A, 31B and 31N).		
Additional requirement: Only liquids with a vapour pressure less than or equal to 110 kPa at 50 °C, or 130 kPa at 55 °C, are authorized.		
Special packing provision: **B12** For UN No. 3130, the openings of receptacles for this substance shall be tightly closed by means of two devices in series, one of which shall be screwed or secured in an equivalent manner.		

IBC02	PACKING INSTRUCTION	IBC02
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: (1) Metal (31A, 31B and 31N); (2) Rigid plastics (31H1 and 31H2); (3) Composite (31HZ1).		
Additional requirement: Only liquids with a vapour pressure less than or equal to 110 kPa at 50 °C, or 130 kPa at 55 °C, are authorized.		
Special packing provisions: **B5** For UN Nos. 1791, 2014, 2984 and 3149, IBCs shall be provided with a device to allow venting during carriage. The inlet to the venting device shall be sited in the vapour space of the IBC under maximum filling conditions during carriage. **B7** For UN Nos. 1222 and 1865, IBCs with a capacity greater than 450 litres are not permitted due to the substance's potential for explosion when carried in large volumes. **B8** The pure form of this substance shall not be carried in IBCs since it is known to have a vapour pressure of more than 110 kPa at 50 °C or 130 kPa at 55 °C.		

IBC03	PACKING INSTRUCTION	IBC03
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: (1) Metal (31A, 31B and 31N); (2) Rigid plastics (31H1 and 31H2); (3) Composite (31HZ1, 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2).		
Additional requirement: Only liquids with a vapour pressure less than or equal to 110 kPa at 50 °C, or 130 kPa at 55 °C, are authorized.		
Special packing provision: **B8** The pure form of this substance shall not be carried in IBCs since it is known to have a vapour pressure of more than 110 kPa at 50 °C or 130 kPa at 55 °C.		

IBC04	PACKING INSTRUCTION	**IBC04**
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).		
Special packing provision: **B1** For Packing Group I substances, IBCs shall be carried in covered wagons or closed containers.		

IBC05	PACKING INSTRUCTION	**IBC05**
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: (1) Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); (2) Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); (3) Composite (11HZ1, 21HZ1 and 31HZ1).		
Special packing provisions: **B1** For Packing Group I substances, IBCs shall be carried in covered wagons or closed containers. **B2** For Packing Group II solids, IBCs other than metal or rigid plastics IBCs shall be carried in covered wagons or closed containers.		

IBC06	PACKING INSTRUCTION	**IBC06**
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: (1) Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); (2) Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); (3) Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2).		
Additional requirement: Composite IBCs 11HZ2, 21HZ2 and 31HZ2 shall not be used when the substances being carried may become liquid during carriage.		
Special packing provisions: **B1** For Packing Group I substances, IBCs shall be carried in covered wagons or closed containers. **B2** For Packing Group II solids, IBCs other than metal or rigid plastics IBCs shall be carried in covered wagons or closed containers.		

IBC07	PACKING INSTRUCTION	IBC07

The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met:

(1) Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N);

(2) Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2);

(3) Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2);

(4) Wooden (11C, 11D and 11F).

Additional requirement:

Liners of wooden IBCs shall be sift-proof.

Special packing provisions:

B1 For Packing Group I substances, IBCs shall be carried in covered wagons or closed containers.

B2 For Packing Group II solids, IBCs other than metal or rigid plastics IBCs shall be carried in covered wagons or closed containers.

IBC08	PACKING INSTRUCTION	IBC08

The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 and the special provisions of 4.1.5 are met:

(1) Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N);

(2) Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2);

(3) Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2);

(4) Fibreboard (11G);

(5) Wooden (11C, 11D and 11F);

(6) Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2).

Special packing provisions:

B2 For Packing Group II solids, IBCs other than metal or rigid plastics IBCs shall be carried in covered wagons or closed containers.

B3 Flexible IBCs shall be sift-proof and water-resistant or shall be fitted with a siftproof and water-resistant liner.

B4 Flexible, fibreboard and wooden IBCs shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.

B6 For UN Nos. 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC testing requirements of Chapter 6.5.

IBC99	PACKING INSTRUCTION	IBC99

Only IBCs which are approved by the competent authority may be used.

IBC100	PACKING INSTRUCTION	IBC100

This instruction applies to UN Nos. 0082, 0241, 0331 and 0332.

The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 and special provisions of 4.1.5 are met:

(1) Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N);

(2) Flexible (13H2, 13H3, 13H4, 13L2, 13L3, 13L4 and 13M2);

(3) Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2);

(4) Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2).

Additional requirements:

1. IBCs shall only be used for free flowing substances.

2. Flexible IBCs shall only be used for solids.

Special packing provisions:

B9 For UN No. 0082, this packing instruction may only be used when the substances are mixtures of ammonium nitrate or other inorganic nitrates with other combustible substances which are not explosive ingredients. Such explosives shall not contain nitroglycerin, similar liquid organic nitrates, or chlorates. Metal IBCs are not authorized.

B10 For UN No. 0241, this packing instruction may only be used for substances which consist of water as an essential ingredient and high proportions of ammonium nitrate or other oxidizing substances some or all of which are in solution. The other constituents may include hydrocarbons or aluminium powder, but shall not include nitro-derivatives such as trinitrotoluene. Metal IBCs are not authorized.

IBC520	PACKING INSTRUCTION		IBC520
This instruction applies to organic peroxides and self-reactive substances of type F.			
The IBCs listed below are authorized for the formulations listed, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 and special provisions of 4.1.7.2 are met. For formulations not listed below, only IBCs which are approved by the competent authority may be used (see 4.1.7.2.2).			
UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)
3109	ORGANIC PEROXIDE, TYPE F, LIQUID		
	tert-Butyl hydroperoxide, not more than 72 % with water	31A	1 250
	tert-Butyl peroxyacetate, not more than 32 % in diluent type A	31A 31HA1	1 250 1 000
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32 % in diluent type A	31A 31HA1	1 250 1 000
	Cumyl hydroperoxide, not more than 90 % in diluent type A	31HA1	1 250
	Dibenzoyl peroxide, not more than 42 % as a stable dispersion in water	31H1	1 000
	Di-tert-butyl peroxide, not more than 52 % in diluent type A	31A 31HA1	1 250 1 000
	1,1-Di-(tert-butylperoxy) cyclohexane, not more than 42 % in diluent type A	31H1	1000
	Dilauroyl peroxide, not more than 42 %, stable dispersion, in water	31HA1	1 000
	Isopropyl cumyl hydroperoxide, not more than 72 % in diluent type A	31HA1	1 250
	p-Menthyl hydroperoxide, not more than 72 % in diluent type A	31HA1	1 250
	Peroxyacetic acid, stabilized, not more than 17 %	31H1 31HA1 31A	1 500 1 500 1 500

Dispositions supplémentaires:

1. Les GRV doivent être munis d'un dispositif permettant le dégagement des gaz pendant le transport. L'orifice du dispositif de décompression doit être située dans l'espace vapeur du GRV, dans des conditions de remplissage maximum, au cours du transport.
2. Pour éviter une rupture explosive des GRV métalliques ou des GRV composites à enveloppe métallique complète, les dispositifs de décompression d'urgence doivent être conçus pour évacuer tous les produits de décomposition et vapeurs dégagés pendant une décomposition auto-accélérée ou pendant une durée d'au moins une heure d'immersion dans les flammes comme calculé selon la formule du 4.2.1.13.8 ou 6.8.4, disposition spéciale TE12.

IBC620	PACKING INSTRUCTION	IBC620
This instruction applies to UN No. 3291.		
The following IBCs are authorized, provided the general provisions of 4.1.1, 4.1.2 and 4.1.3 are met: Rigid, leakproof IBCs conforming to the Packing Group II performance level. Additional requirements:		

Additional requirements:

1. There shall be sufficient absorbent material to absorb the entire amount of liquid present in the IBC.
2. IBCs shall be capable of retaining liquids.
3. IBCs intended to contain sharp objects such as broken glass and needles shall be resistant to puncture.

4.1.4.3. Packing instructions concerning the use of large packagings

LP01	PACKING INSTRUCTION (LIQUIDS)			**LP01**
The following large packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:				
Inner packagings	Large outer packagings	Packing Group I	Packing Group II	Packing Group III
Glass 10 litre Plastics 30 litre Metal 40 litre	Steel (50A) Aluminium (50B) Metal other than steel or aluminium (50N) Rigid plastics (50H) Natural wood (50C) Plywood (50D) Reconstituted wood (50F) Fibreboard (50G)	Not allowed	Not allowed	Maximum capacity: 3 m^3

LP02	PACKING INSTRUCTION (SOLIDS)			**LP02**
The following large packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:				
Inner packagings	Large outer packagings	Packing Group I	Packing Group II	Packing Group III
Glass 10 kg Plastics ([b]) 50 kg Metal 50 kg Paper ([a]), ([b]) 50 kg Fibreboard ([a]), ([b]) 50 kg	Steel (50A) Aluminium (50B) Metal other than steel or aluminium (50N) Rigid plastics (50H) Natural wood (50C) Plywood (50D) Reconstituted wood (50F) Fibreboard (50G)	Not allowed	Not allowed	Maximum capacity: 3 m^3
([a]) These inner packagings shall not be used when the substances being carried may become liquid during carriage. ([b]) These inner packagings shall be sift-proof.				

LP99	PACKING INSTRUCTION	**LP99**
Only large packagings which are approved by the Competent Authority may be used (see 4.1.3.7).		

LP101	PACKING INSTRUCTION	**LP101**
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 and special provisions of 4.1.5 are met:		
Inner packagings	Intermediate packagings	Large outer packagings
Not necessary	Not necessary	Steel (50A) Aluminium (50B) Metal other than steel or aluminium (50N) Rigid plastics (50H) Natural wood (50C) Plywood (50D) reconstituted wood (50F) Fibreboard (50G)
Special packing provision: **L1** For UN Nos. 0006, 0009, 0010, 0015, 0016, 0018, 0019, 0034, 0035, 0038, 0039, 0048, 0056, 0137, 0138, 0168, 0169, 0171, 0181, 0182, 0183, 0186, 0221, 0243, 0244, 0245, 0246, 0254, 0280, 0281, 0286, 0287, 0297, 0299, 0300, 0301, 0303, 0321, 0328, 0329, 0344, 0345, 0346, 0347, 0362, 0363, 0370, 0412, 0424, 0425, 0434, 0435, 0436, 0437, 0438, 0451, 0488 and 0502: Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged. When such articles have propelling charges or are self-propelled, their ignition systems shall be protected against stimuli encountered during normal conditions of carriage. A negative result in Test Series 4 on an unpackaged article indicates that the article can be considered for carriage unpackaged. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling devices.		

LP102	PACKING INSTRUCTION	**LP102**
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 and special provisions of 4.1.5 are met:		
Inner packagings	Intermediate packagings	Outer packagings
Bags water resistant *Receptacles* fibreboard metal plastics wood *Sheets* fibreboard, corrugated *Tubes* fibreboard	Not necessary	Steel (50A) Aluminium (50B) Metal other than steel or aluminium (50N) Rigid plastics (50H) Natural wood (50C) Plywood (50D) Reconstituted wood (50F) Fibreboard (50G)

LP621	PACKING INSTRUCTION	**LP621**
This instruction applies to UN No. 3291.		
The following large packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 and the special provisions of 4.1.8 are met: (1) For clinical waste placed in inner packagings: rigid, leakproof large packagings conforming to the requirements of Chapter 6.6 for solids, at the Packing Group II performance level, provided there is sufficient absorbent material to absorb the entire amount of liquid present and the large packaging is capable of retaining liquids; (2) For packages containing larger quantities of liquid: large rigid packagings conforming to the requirements of Chapter 6.6, at the Packing Group II performance level, for liquids.		
Additional requirement: Large packagings intended to contain sharp objects such as broken glass and needles shall be resistant to puncture and retain liquids under the performance test conditions in Chapter 6.6.		

4.1.4.4. Particular requirements applicable to the use of pressure receptacles for substances other than those of Class 2

When gas cylinders or gas receptacles are used as packaging for substances assigned to packing instructions P400, P401, P402 or P601, they shall be constructed, tested, filled and marked according to the corresponding requirements (PR1 to PR6) as mentioned in table A below for each UN number.

Tabel A

List of Particular Requirements (PR) for gas cylinders and receptacles

Requirement code	UN Nos.	Applicable construction, testing, filling and marking requirements
PR1	1366 1370 1380 1389 1391 1411 1421 1928 2003 2445 2845 2870 3049 3050 3051 3052 3053 3076 3129 3130 3148 3194 3203 3207 3254	The substances classified under these UN numbers shall be packed in hermetically closing metal receptacles which are not affected by the contents and have a capacity of not more than 450 litres. The receptacles shall be subjected to the initial test and periodic tests every five years at a pressure of not less than 1 MPa (10 bar) (gauge pressure). The receptacles shall not be filled to more than 90 % of their capacity; however, a space of at least 5 % shall remain empty when the liquid is at an average temperature of 50 °C. During carriage, the liquid shall be under a layer of inert gas the gauge pressure of which shall be not less than 50 kPa (0,5 bar). The receptacles shall carry a data plate with the following particulars entered in a durable form: — substance or substances1 accepted for carriage ([a]); — tare of the receptacle, including accessories ([b]); — test pressure (gauge pressure) ([b]); — date (month, year) of the last test undergone; — stamp of the expert who carried out the test; — capacity of the receptacle ([b]); — maximum mass of filling allowed ([b])

Requirement code	UN Nos.	Applicable construction, testing, filling and marking requirements
PR2	1183 1242 1295 2988	The substances classified under these UN numbers shall be packed in corrosion-resistant steel receptacles with a maximum capacity of 450 litres. The closing device of the receptacle shall be protected by a cap. The receptacles shall be subjected to the initial test and periodic tests every five years at a pressure of not less than 0,4 MPa (4 bar) (gauge pressure). The maximum permissible mass of filling per litre of capacity for trichlorosilane, ethyldichlorosilane and methyldichlorosilane shall not exceed 1,14 kg, 0,93 kg or 0,95 kg respectively, if the filling is carried out by mass; if the filling is by volume, the degree of filling shall not exceed 85 %. The receptacles shall also carry a plate showing the following particulars in a durable form: — 'chlorosilanes, Class 4.3'; — tare of the receptacle, including accessories ([b]); — test pressure (gauge pressure) ([b]); — date (month, year) of the last test undergone; — stamp of the expert who carried out the test; — capacity of the receptacle ([b]); — maximum degree of filling allowed by mass for each substance accepted for carriage ([b]).
PR3	1092 1251 1259 1605 1613 1994 3294	The substances classified under these UN numbers shall be packed in steel receptacles fitted with completely leakproof closing devices which shall, if necessary, be secured against mechanical damage by protective caps. Metal receptacles of a capacity not exceeding 150 litres shall have a minimum wall thickness of 3 mm, and larger steel receptacles and receptacles made of other materials shall have walls at least thick enough to ensure equivalent mechanical strength. The maximum capacity of receptacles permitted shall be 250 litres. The mass of the contents shall be not more than 1 kg per litre of capacity. Before being used for the first time, the receptacles shall undergo a hydraulic pressure test at a pressure of not less than 1 MPa (10 bar) (gauge pressure). The pressure test shall be repeated every five years and shall include a meticulous inspection of the inside of the receptacle and a check of the tare. The receptacles shall bear the following particulars in clearly legible and durable characters: — substance or substances ([a]) accepted for carriage; — the name of the owner of the receptacle; — the tare ([b]) of the receptacle, including such fittings and accessories as valves, protective caps, etc; — the date (month, year) of the initial test and of the most recent test, and the stamp of the expert who carried out the test; — the maximum permissible mass of the contents of the receptacle in kg; — the internal pressure (test pressure) to be applied in the hydraulic pressure test.

Requirement code	UN Nos.	Applicable construction, testing, filling and marking requirements
PR4	1185	The substances shall be packed in steel receptacles of sufficient thickness, which shall be closed by a screw-threaded bung and a screw-threaded protective cap or equivalent device leakproof both to liquid and to vapour. The receptacles shall initially and periodically, at least every five years, be tested at a pressure of at least 1 MPa (10 bar) (gauge pressure) in accordance with 6.2.1.5 and 6.2.1.6. The mass of the contents shall not exceed 0,67 kg per litre of capacity. A package shall not weigh more than 75 kg. Receptacles shall bear, in clearly legible and durable characters: — the name or mark of the manufacturer and the number of the receptacle; — the word 'ethyleneimine'; — the tare ([b]) of the receptacle and its maximum permitted mass when filled ([b]); — the date (month and year) of the initial test and of the most recent test undergone; — the stamp of the expert who carried out the tests.
PR5	2480 2481	The substances classified under this UN number shall be packed in receptacles made of pure aluminium having a wall thickness of not less than 5 mm or in receptacles of stainless steel. The receptacles shall be fully welded. They shall initially and periodically, at least every five years, be tested at a pressure of at least 0,5 MPa (5 bar) (gauge pressure) in accordance with 6.2.1.5 and 6.2.1.6. They shall be so closed as to be leakproof by means of two closures one above the other, one of which shall be screwthreaded or secured in an equally effective manner. The degree of filling shall be not more than 90 %. Drums weighing more than 100 kg shall be fitted with rolling hoops or stiffening ribs. The receptacles shall bear, in clearly legible and durable characters: — the name or mark of the manufacturer and the number of the receptacle; — substance or substances ([a]) accepted for carriage; — the tare ([b]) of the receptacle and its maximum permitted mass when filled; — the date (month and year) of the initial test and of the most recent test undergone; — the stamp of the expert who carried out the tests.

Requirement code	UN Nos.	Applicable construction, testing, filling and marking requirements
PR6	1744	Bromine containing less than 0,005 % water, or between 0,005 % and 0,2 % water, provided that in the latter case measures are taken to prevent corrosion of the lining of the receptacles, may be carried in receptacles satisfying the following conditions: (a) The receptacles shall be made of steel and be equipped with a leakproof lining made of lead or of some other material affording equivalent protection and with a hermetic closure; receptacles made of monel metal or nickel, or with a nickel lining, shall also be permitted; (b) The capacity of the receptacles shall not exceed 450 litres; (c) The receptacles shall not be filled to more than 92 % of their capacity or more than 2,86 kg per litre of capacity; (d) The receptacles shall be welded and designed for a calculation pressure of not less than 2,1 MPa (21 bar) (gauge pressure). The materials and workmanship shall in other respects meet the relevant requirements of Chapter 6.2. The initial test of unlined steel receptacles shall be subject to the requirements of 6.2.1.5; (e) The closures shall project as little as possible from the receptacle and be fitted with protective caps. The closures and caps shall be fitted with gaskets made of a material not capable of being attacked by bromine. The closures shall be in the upper part of the receptacles in such a manner that they can in no case be in permanent contact with the liquid phase; (f) The receptacles shall be provided with fittings enabling them to stand stably upright, and with lifting attachments (rings, flanges, etc.) at the top, which shall be tested at twice the working load. Before being put into service, the receptacles shall be subjected to a leakproofness test at a pressure of at least 200 kPa (2 bar) (gauge pressure). The leakproofness test shall be repeated every two years and shall be accompanied by an internal inspection of the receptacle and a check of its tare. The test and the inspection shall be carried out under the supervision of an expert approved by the competent authority. The receptacles shall bear, in clearly legible and durable characters: — the name or mark of the manufacturer and the number of the receptacle; — the word 'Bromine'; — tare ([b]) mass of the receptacle and the permissible maximum mass ([b]) of the filled receptacle; — date (month, year) of the initial test and of the latest periodical test; — stamp of the expert who carried out the tests and inspections.

([a]) The name may be replaced by a generic description covering substances of a similar nature and also compatible with the characteristics of the receptacle.
([b]) The units of measurement to be added each time after the numerical values.

4.1.5. *Special packing provisions for goods of class 1*

4.1.5.1. The general provisions of section 4.1.1 shall be met.

4.1.5.2. All packagings for Class 1 goods shall be so designed and constructed that:

(a) They will protect the explosives, prevent them escaping and cause no increase in the risk of unintended ignition or initiation when subjected to normal conditions of carriage including foreseeable changes in temperature, humidity and pressure;

(b) The complete package can be handled safely in normal conditions of carriage; and

(c) The packages will withstand any loading imposed on them by foreseeable stacking to which they will be subject during carriage so that they do not add to the risk presented by the explosives, the containment function of the packagings is not harmed, and they are not distorted in a way or to an extent which will reduce their strength or cause instability of a stack.

4.1.5.3. All explosive substances and articles, as prepared for carriage, shall have been classified in accordance with the procedures detailed in 2.2.1.

4.1.5.4. Class 1 goods shall be packed in accordance with the appropriate Packing Instruction shown in Column 8 of Table A of Chapter 3.2, as detailed in 4.1.4.

4.1.5.5. Packagings, including IBCs and large packagings shall conform to the requirements of Chapter 6.1, 6.5 or 6.6, respectively, and shall meet the test requirements of 6.1.5, 6.5.4 or 6.6.5, respectively, for Packing Group II, subject to 4.1.1.13, 6.1.2.4 and 6.5.1.4.4. Packagings other than metal packagings meeting the test criteria of Packing Group I may be used. To avoid unnecessary confinement, metal packagings of Packing Group I shall not be used.

4.1.5.6. The closure device of packagings containing liquid explosives shall ensure a double protection against leakage.

4.1.5.7. The closure device of metal drums shall include a suitable gasket; if a closure device includes a screw-thread, the ingress of explosive substances into the screw-thread shall be prevented.

4.1.5.8. Packagings for water soluble substances shall be water resistant. Packagings for desensitized or phlegmatized substances shall be closed to prevent changes in concentration during carriage.

4.1.5.9. (Reserved)

4.1.5.10. Nails, staples and other closure devices made of metal without protective covering shall not penetrate to the inside of the outer packaging unless the inner packaging adequately protects the explosives against contact with the metal.

4.1.5.11. Inner packagings, fittings and cushioning materials and the placing of explosive substances or articles in packages shall be accomplished in a manner which prevents the explosive substances or articles from becoming loose in the outer packaging under normal conditions of carriage. Metallic components of articles shall be prevented from making contact with metal packagings. Articles containing explosive substances not enclosed in an outer casing shall be separated from each other in order to prevent friction and impact. Padding, trays, partitioning in the inner or outer packaging, mouldings or receptacles may be used for this purpose.

4.1.5.12. Packagings shall be made of materials compatible with, and impermeable to, the explosives contained in the package, so that neither interaction between the explosives and the packaging materials, nor leakage, causes the explosive to become unsafe for carriage, or the hazard division or compatibility group to change.

4.1.5.13. The ingress of explosive substances into the recesses of seamed metal packagings shall be prevented.

4.1.5.14. Plastics packagings shall not be liable to generate or accumulate sufficient static electricity so that a discharge could cause the packaged explosive substances or articles to initiate, ignite or function.

4.1.5.15. Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged. When such articles have propelling charges or are self-propelled, their ignition systems shall be protected against stimuli encountered during normal conditions of carriage. A negative result in Test Series 4 on an unpackaged article indicates that the article can be considered for carriage unpackaged. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling, storage or launching devices in such a way that they will not become loose during normal conditions of carriage.

Where such large explosive articles are as part of their operational safety and suitability tests subjected to test regimes that meet the intentions of this Directive and such tests have been successfully undertaken, the competent authority may approve such articles to be carried under this Directive.

4.1.5.16. Explosive substances shall not be packed in inner or outer packagings where the differences in internal and external pressures, due to thermal or other effects, could cause an explosion or rupture of the package.

4.1.5.17. Whenever loose explosive substances or the explosive substance of an uncased or partly cased article may come into contact with the inner surface of metal packagings (1A2, 1B2, 4A, 4B and metal receptacles), the metal packaging shall be provided with an inner liner or coating (see 4.1.1.2).

4.1.5.18. Packing instruction P101 may be used for any explosive provided the packaging has been approved by a competent authority regardless of whether the packaging complies with the packing instruction assignment in column 8 of Table A of Chapter 3.2.

4.1.6. *Special packing provisions for goods of Class 2*

4.1.6.1. Receptacles, including their closures, shall be selected to contain a gas or a mixture of gases according to the requirements of 6.2.1.2 'Materials of receptacles' and the requirements of the relevant packing instructions of 4.1.4.

4.1.6.2. A change of use of a refillable receptacle shall include emptying, purging and evacuation operations to the extent necessary for safe operation (see also table of standards at the end of this section).

NOTE 1. Refillable receptacles for the carriage of gases of Class 2 shall be periodically inspected according to the periodicity set out in the relevant Packing Instructions (P200 or P203) and according to the provisions detailed in 6.2.1.6 'Periodic inspection'.

NOTE 2. Receptacles ready for consignment shall be marked and labelled according to the provisions set out in Chapter 5.2

4.1.6.3. Receptacles except open cryogenic receptacles, including their closures, shall conform to the design, construction, inspection and testing requirements detailed in Chapter 6.2. When outer packagings are prescribed, the receptacles shall be firmly secured therein. Unless otherwise specified in the relevant packing instructions, receptacles may be enclosed in outer packagings either singly or in groups.

4.1.6.4. Valves (cocks) shall be effectively protected from damage which could cause gas release if the receptacle falls, and during carriage and stacking. This requirement is deemed to be complied with if one or more of the following conditions are fulfilled (see also table of standards at the end of this section):

(a) Valves are placed inside the neck of the receptacle and protected by a screw-threaded plug;

(b) Valves are protected by caps. Caps shall possess vent-holes of sufficient cross-sectional area to evacuate gases if leakage occurs at the valves;

(c) Valves are protected by shrouds or other protective devices;

(d) Valves are designed and constructed in such a way that they are capable of withstanding damage without leakage;

(e) Valves are placed inside a protective frame;

(f) Receptacles are carried in protective boxes or frames.

4.1.6.5. Receptacles, containing pyrophoric gases or very toxic gases (gases with an LC_{50} lower than 200 ppm) shall have their valve(s) openings fitted with gas-tight plugs or cap nuts which shall be made of a material not liable to attack by the contents of the receptacle.

4.1.6.6. Receptacles may be carried after the expiry of the time-limit set for the periodic test prescribed for the purpose of undergoing the test.

4.1.6.7. Requirements of the following packing provisions are considered to have been complied with if the following standards, as relevant, are applied:

Applicable paragraphs	Reference	Title of document
4.1.6.2	EN 1795:1997	Gas cylinders (excluding LPG) — Procedures for change of gas service.
4.1.6.4	EN 962:1996/A2:2000	Valve protection caps and valve guards for industrial and medical gas cylinders — Design, construction and tests.

4.1.7. *Special packing provisions for organic peroxides (Class 5.2) and self-reactive substances of Class 4.1*

4.1.7.1. Use of packagings

4.1.7.1.1 Packagings for organic peroxides and self-reactive substances shall meet the requirements of Chapter 6.1 or of Chapter 6.6 at the Packing Group II performance level. To avoid unnecessary confinement, metal packagings meeting the test criteria of Packing Group I shall not be used.

4.1.7.1.2 The packing methods for organic peroxides and self-reactive substances are listed in packing instruction P520 and are designated OP1 to OP8. The quantities specified for each packing method are the maximum quantities authorized per package.

4.1.7.1.3 The packing methods appropriate for the individual currently assigned organic peroxides and self-reactive substances are listed in 2.2.41.4 and 2.2.52.4.

4.1.7.1.4 For new organic peroxides, new self-reactive substances or new formulations of currently assigned organic peroxides or self-reactive substances, the following procedure shall be used to assign the appropriate packing method:

(a) ORGANIC PEROXIDE, TYPE B or SELF-REACTIVE SUBSTANCE, TYPE B:

Packing method OP5 shall be assigned, provided that the organic peroxide (or selfreactive substance) satisfies the criteria of 20.4.3 (b) (resp. 20.4.2 (b)) of the Manual of Tests and Criteria in a packaging authorized by the packing method. If the organic peroxide (or self-reactive substance) can only satisfy these criteria in a smaller packaging than those authorized by packing method OP5 (viz. one of the packagings listed for OP1 to OP4), then the corresponding packing method with the lower OP number is assigned;

(b) ORGANIC PEROXIDE, TYPE C of SELF-REACTIVE SUBSTANCE, TYPE C:

Packing method OP6 shall be assigned, provided that the organic peroxide (or selfreactive substance) satisfies the criteria of 20.4.3 (c) (resp. 20.4.2 (c)) of the Manual of Tests and Criteria in a packaging authorized by the packing method. If the organic peroxide (or self-reactive substance) can only satisfy these criteria in a smaller packaging than those authorized by packing method OP6 then the corresponding packing method with the lower OP number is assigned;

(c) ORGANIC PEROXIDE, TYPE D or SELF-REACTIVE SUBSTANCE, TYPE D:

Packing method OP7 shall be assigned to this type of organic peroxide or self-reactive substance;

(d) ORGANIC PEROXIDE, TYPE E or SELF-REACTIVE SUBSTANCE, TYPE E:

Packing method OP8 shall be assigned to this type of organic peroxide or self-reactive substance;

(e) ORGANIC PEROXIDE, TYPE F or SELF-REACTIVE SUBSTANCE, TYPE F:

Packing method OP8 shall be assigned to this type of organic peroxide or self-reactive substance.

4.1.7.2. Use of intermediate bulk containers

4.1.7.2.1. The currently assigned organic peroxides specifically listed in the table of 2.2.52.4 and indicated by the letter 'N' in the 'Packing Method' column of that table may be carried in IBCs in accordance with packing instruction IBC 520.

4.1.7.2.2. Other organic peroxides and self-reactive substances of type F may be carried in IBCs under conditions established by the competent authority of the country of origin when, on the basis of the appropriate tests, that competent authority is satisfied that such carriage may be safely conducted. The tests undertaken shall include those necessary:

(a) To prove that the organic peroxide (or self-reactive substance) complies with the principles for classification given in 20.4.3(f) (resp. 20.4.2 (f)) of the Manual of Tests and Criteria, exit box F of Figure 20.1 (b) of the Manual;

(b) To prove the compatibility of all materials normally in contact with the substance during carriage;

(c) (Reserved)

(d) To design, when applicable, pressure and emergency relief devices; and

(e) To determine if any special provisions are necessary for safe carriage of the substance.

If the country of origin is not a Member State, these conditions shall be recognized by the competent authority of the first Member State reached by the consignment.

4.1.8. *Special packing provisions for infectious substances (Class 6.2)*

4.1.8.1 Consignors of infectious substances shall ensure that packages are prepared in such a manner that they arrive at their destination in good condition and present no hazard to persons or animals during carriage.

4.1.8.2 The definitions in 1.2.1 and the general provisions of 4.1.1.1 to 4.1.1.14, except 4.1.1.3 and 4.1.1.9 to 4.1.1.12, apply to packages containing infectious substances.

4.1.8.3 An itemized list of contents shall be enclosed between the secondary packaging and the outer packaging.

4.1.8.4 Before an empty packaging is returned to the consignor, or sent elsewhere, it shall be thoroughly disinfected or sterilized and any label or marking indicating that it had contained an infectious substance shall be removed or obliterated.

4.1.9. *Special packing provisions for class 7*

4.1.9.1. General

4.1.9.1.1. Radioactive material, packagings and packages shall meet the requirements of Chapter 6.4. The quantity of radioactive material in a package shall not exceed the limits specified in 2.2.7.7.1.

4.1.9.1.2. The non-fixed contamination on the external surfaces of any package shall be kept as low as practicable and, under routine conditions of carriage, shall not exceed the following limits:

(a) 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters; and

(b) 0,4 Bq/cm^2 for all other alpha emitters.

These limits are applicable when averaged over any area of 300 cm^2 of any part of the surface.

4.1.9.1.3. A package shall not contain any other items except such articles and documents as are necessary for the use of the radioactive material. This requirement shall not preclude the carriage of low specific activity material or surface contaminated objects with other items. The carriage of such articles and documents in a package, or of low specific activity material or surface contaminated objects with other items may be permitted provided that there is no interaction between them and the packaging or its radioactive contents that would reduce the safety of the package.

4.1.9.1.4. Except as provided in 7.5.11, CW33, the level of non-fixed contamination on the external and internal surfaces of wagons, containers, tank wagons, tank-containers, overpacks and IBCs shall not exceed the limits specified in 4.1.9.1.2.

4.1.9.1.5. Radioactive material with a subsidiary risk shall be carried in packagings, IBCs or tanks fully complying with the requirements of the relevant chapters of Part 6 as appropriate, as well as applicable requirements of chapters 4.1, 4.2 or 4.3 for that subsidiary risk.

4.1.9.2. Requirements and controls for carriage of LSA material and SCO

4.1.9.2.1. The quantity of LSA material or SCO articles in a single Industrial Package Type 1 (Type IP-1), Industrial Package Type 2 (Type IP-2), Industrial Package Type 3 (Type IP-3), or object or collection of objects, whichever is appropriate, shall be so restricted that the external radiation level at 3 m from the unshielded material or object or collection of objects does not exceed 10 mSv/h.

4.1.9.2.2. LSA material and SCO which is or contains fissile material shall meet the applicable requirements of 6.4.11.1 and 7.5.11, CW33 paragraphs (4.1) and (4.2).

4.1.9.2.3. LSA material and SCO in groups LSA-I and SCO-I may be carried unpackaged under the following conditions:

(a) All unpackaged material other than ores containing only naturally occurring radionuclides shall be carried in such a manner that under routine conditions of carriage there will be no escape of the radioactive contents from the wagon nor will there be any loss of shielding;

(b) Each wagon shall be under exclusive use, except when only carrying SCO-I on which the contamination on the accessible and the inaccessible surfaces is not greater than ten times the applicable level specified in 2.2.7.5;

(c) For SCO-I where it is suspected that non-fixed contamination exists on inaccessible surfaces in excess of the values specified in 2.2.7.5(a)(i), measures shall be taken to ensure that the radioactive material is not released into the wagon.

4.1.9.2.4. LSA material and SCO, except as otherwise specified in 4.1.9.2.3, shall be packed in package types in accordance with the table below:

Industrial package requirements for LSA-material and SCO

Radioactive contents		Industrial Package type	
		Exclusive use	Not under exclusive use
LSA-I ([a])			
	Solid ([a])	Type IP-1	Type IP-1
	Liquid	Type IP-1	Type IP-2
LSA-II			
	Solid	Type IP-2	Type IP-2
	Liquid and gas	Type IP-2	Type IP-3
LSA-III		Type IP-2	Type IP-3
SCO-I ([a])		Type IP-1	Type IP-1
SCO-II		Type IP-2	Type IP-2

([a]) Under the conditions specified in 4.1.9.2.3, LSA-I material and SCO-I may be carried unpackaged.

4.1.10. *Special provisions for mixed packing*

4.1.1.10.1. When mixed packing is permitted in accordance with the provisions of this section, different dangerous goods or dangerous goods and other goods may be packed together in combination packagings conforming to 6.1.4.21, provided that they do not react dangerously with one another and that all other relevant provisions of this Chapter are complied with.

NOTE 1. See also 4.1.1.5 and 4.1.1.6.

NOTE 2. For goods of Class 7, see 4.1.9.

4.1.10.2. Except for packages containing Class 1 goods only or Class 7 goods only, if wooden or fibreboard boxes are used as outer packagings, a package containing different goods packed together shall not weigh more than 100 kg.

4.1.10.3. Unless otherwise prescribed by a special provision applicable according to 4.1.10.4, dangerous goods of the same Class and the same classification code may be packed together.

4.1.10.4. When indicated for a given entry in column (9b) of table A of Chapter 3.2, the following special provisions shall apply to the mixed packing of the goods assigned to that entry with other goods in the same package.

MP 1 May only be packed together with goods of the same type within the same compatibility group.

MP 2 Shall not be packed together with other goods.

MP 3 Only mixed packing of UN No. 1873 with UN No. 1802 is permitted.

MP 4 Shall not be packed together with goods of other Classes or with goods which are not subject to the requirements of this Directive. However, if this organic peroxide is a hardener or compound system for Class 3 substances, mixed packing is permitted with these substances of Class 3.

MP 5 Substances of UN No. 2814 and UN No. 2900 may be packed together in a combination packaging in conformity with P620. They shall not be packed together with other goods; this does not apply to diagnostic specimens packed in accordance with P650 or to substances added as coolants, e.g. ice, dry ice or refrigerated liquid nitrogen.

MP 6 Shall not be packed together with other goods. This does not apply to substances added as coolants, e.g. ice, dry ice or refrigerated liquid nitrogen.

MP 7 May — in quantities not exceeding 5 litres per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 8 May — in quantities not exceeding 3 litres per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 9 May be packed together in an outer packaging for combination packagings in accordance with 6.1.4.21:

— with other goods of Class 2;

— with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 10 May — in quantities not exceeding 5 kg per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 11 May — in quantities not exceeding 5 kg per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes (except substances of Packing Group I or II of Class 5.1) when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 12

May — in quantities not exceeding 5 kg per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes (except substances of Packing Group I or II of Class 5.1) when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

Packagings shall not weigh more than 45 kg. If fibreboard boxes are used, a package shall not weigh more than 27 kg.

MP 13 May — in quantities not exceeding 3 kg per inner packaging and per package — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 14 May — in quantities not exceeding 6 kg per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 15 May — in quantities not exceeding 3 litres per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 16 May — in quantities not exceeding 3 litres per inner packaging and per package — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 17 May — in quantities not exceeding 0,5 litre per inner packaging and 1 litre per package – be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of other Classes, except Class 7, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 18 May — in quantities not exceeding 0,5 kg per inner packaging and 1 kg per package — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of other Classes, except Class 7, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 19 May — in quantities not exceeding 5 litres per inner packaging — be packed together in a combination packaging conforming to 6.1.4.21:

— with goods of the same Class covered by other classification codes or with goods of other Classes, when mixed packing is also permitted for these; and/or

— with goods which are not subject to the requirements of this Directive,

provided they do not react dangerously with one another.

MP 20 May be packed together with substances covered by the same UN number.

Shall not be packed together with goods of Class 1 having different UN numbers.

Shall not be packed together with goods of other Classes or with goods which are not subject to the requirements of this Directive.

When packed together, account shall be taken of a possible amendment of the classification of packages in accordance with 2.2.1.1.

For the description of the goods in the consignment note for goods of Class 1 packed together, see 5.4.1.2.1(b).

MP 21 May be packed together with articles covered by the same UN number.

Shall not be packed together with goods of Class 1 having different UN numbers, except for

(a) their own means of initiation, provided that:

(i) the means of initiation will not function under normal conditions of carriage; or

(ii) such means have at least two effective protective features which prevent explosion of an article in the event of accidental functioning of the means of initiation; or

(iii) when such means do not have two effective protective features (i.e. means of initiation assigned to compatibility group B), in the opinion of the competent authority of the country of origin ([1]) the accidental functioning of the means of initiation does not cause the explosion of an article under normal conditions of carriage;

(b) articles of compatibility groups C, D and E.

Shall not be packed together with goods of other Classes or with goods which are not subject to the requirements of this Directive.

When goods are packed together in accordance with this special provision, account shall be taken of a possible amendment of the classification of packages in accordance with 2.2.1.1.

MP 22 For the description of the goods in the consignment note, see 5.4.1.2.1 (b).

May be packed together with articles covered by the same UN number.

(a) their own means of initiation, provided that the means of initiation will not function under normal conditions of carriage;

(b) articles of compatibility groups C, D and E.

Shall not be packed together with goods of other Classes or with goods which are not subject to the requirements of this Directive.

When goods are packed together in accordance with this special provision, account shall be taken of a possible amendment of the classification of packages in accordance with 2.2.1.1. For the description of the goods in the consignment note, see 5.4.1.2.1 (b).

MP 23 May be packed together with articles covered by the same UN number.

Shall not be packed together with goods of Class 1 having different UN numbers; however, exception is made for their own means of initiation, provided that the means of initiation will not function under normal conditions of carriage.

([1]) If the country of origin is not a Member State, the opinion of the competent authority of the first Member State reached by the consignment shall be recognized.

Shall not be packed together with goods of other Classes or with goods which are not subject to the requirements of RID.

When goods are packed together in accordance with this special provision, account shall be taken of a possible amendment of the classification of packages in accordance with 2.2.1.1.

For the description of the goods in the consignment note, see 5.4.1.2.1 (b).

MP 24 May be packed together with goods with the UN numbers shown in the table below, under the following conditions :

— if a letter A is indicated in the table, the goods with those UN numbers may be included in the same package without any special limitation of mass;

— if a letter B is indicated in the table, the goods with those UN numbers may be included in the same package up to a total mass of 50 kg of explosive substances.

When goods are packed together in accordance with this special provision, account shall be taken of a possible amendment of the classification of packages in accordance with 2.2.1.1(b). For the blescription of the goods in the consignment note, see 5.4.1.2.1(b).

UN No.	0012	0014	0027	0028	0044	0054	0160	0161	0186	0191	0194	0195	0197	0238	0240	0312	0333	0334	0335	0336	0337	0373	0405	0428	0429	0430	0431	0432
0012		A																										
0014	A																											
0027				B	B		B	B																				
0028			B		B		B	B																				
0044			B	B			B	B																				
0054									B	B	B	B	B	B	B	B						B	B	B	B	B	B	B
0160			B	B	B			B																				
0161			B	B	B		B																					
0186						B				B	B	B	B	B	B	B						B	B	B	B	B	B	B
0191						B			B		B	B	B	B	B	B						B	B	B	B	B	B	B
0194						B			B	B		B	B	B	B	B						B	B	B	B	B	B	B
0195						B			B	B	B		B	B	B	B						B	B	B	B	B	B	B
0197						B			B	B	B	B		B	B	B						B	B	B	B	B	B	B
0238						B			B	B	B	B	B		B	B						B	B	B	B	B	B	B
0240						B			B	B	B	B	B	B		B						B	B	B	B	B	B	B
0312						B			B	B	B	B	B	B	B							B	B	B	B	B	B	B
0333																		A	A	A	A							
0334																	A		A	A	A							
0335																	A	A		A	A							
0336																	A	A	A		A							
0337																	A	A	A	A								
0373						B			B	B	B	B	B	B	B	B							B	B	B	B	B	B
0405						B			B	B	B	B	B	B	B	B						B		B	B	B	B	B
0428						B			B	B	B	B	B	B	B	B						B	B		B	B	B	B
0429						B			B	B	B	B	B	B	B	B						B	B	B		B	B	B
0430						B			B	B	B	B	B	B	B	B						B	B	B	B		B	B
0431						B			B	B	B	B	B	B	B	B						B	B	B	B	B		B
0432						B			B	B	B	B	B	B	B	B						B	B	B	B	B	B	

Chapter 4.2

Use of portable tanks

NOTE. For tank wagons, wagons with demountable tanks, tank-containers and tank swap bodies with shells made of metallic materials, as well as battery wagons and multiple element gas containers (MEGCs), see Chapter 4.3; for tank-containers made of fibre-reinforced plastics, see Chapter 4.4.

4.2.1. *General provisions for the use of portable tanks for the carriage of substances of Classes 3 to 9*

4.2.1.1. This section provides general requirements applicable to the use of portable tanks for the carriage of substances of Classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 7, 8 and 9. In addition to these general requirements, portable tanks shall conform to the design, construction and testing requirements detailed in 6.7.2. Substances shall be carried in portable tanks conforming to the applicable portable tank instruction identified in Column 10 of table A of Chapter 3.2 and described in 4.2.4.2.6 (T1 to T23) and the portable tank special provisions described in 4.2.4.3 assigned to each substance in Column 11 of table A of Chapter 3.2.

4.2.1.2. During carriage, portable tanks shall be adequately protected against damage to the shell and service equipment resulting from lateral and longitudinal impact and overturning. If the shell and service equipment are so constructed as to withstand impact or overturning it need not be protected in this way. Examples of such protection are given in 6.7.2.17.5.

4.2.1.3. Certain substances are chemically unstable. They are accepted for carriage only when the necessary steps have been taken to prevent their dangerous decomposition, transformation or polymerization during carriage. To this end, care shall in particular be taken to ensure that shells do not contain any substances liable to promote these reactions.

4.2.1.4. The temperature of the outer surface of the shell excluding openings and their closures or of the thermal insulation shall not exceed 70 °C during carriage. When dangerous goods are carried at elevated temperatures in either liquid or solid state, the shell shall be thermally insulated to meet this condition.

4.2.1.5. Empty portable tanks not cleaned and not gas-free shall comply with the same requirements as portable tanks filled with the previous substance.

4.2.1.6. Substances shall not be carried in the same or adjoining compartments of shells when they may react dangerously (see definition of dangerous reaction in 1.2.1) with each other.

4.2.1.7. The design approval certificate, the test report and the certificate showing the results of the initial inspection and test for each portable tank issued by the competent authority or its authorized body shall be retained by the authority or body and the owner. Owners shall be able to provide this documentation upon the request of any competent authority.

4.2.1.8. Unless the name of the substance(s) being carried appears on the metal plate described in 6.7.2.20.2, a copy of the certificate specified in 6.7.2.18.1 shall be made available upon the request of a competent authority or its authorized body and readily provided by the consignor, consignee or agent, as appropriate.

4.2.1.9. Degree of filling

4.2.1.9.1. Prior to filling, the filler shall ensure that the appropriate portable tank is used and that the portable tank is not loaded with substances which in contact with the materials of the shell, gaskets, service equipment and any protective linings, are likely to react dangerously with them to form dangerous products or appreciably weaken the material. The filler may need to consult the manufacturer of the substance in conjunction with the competent authority for guidance on the compatibility of the substance with the portable tank materials.

4.2.1.9.1.1 Portable tanks shall not be filled above the extent provided in 4.2.1.9.2 to 4.2.1.9.6. The applicability of 4.2.1.9.2, 4.2.1.9.3 or 4.2.1.9.5.1 to individual substances is specified in the applicable portable tank instructions or portable tank special provisions in 4.2.4.2.6 or 4.2.4.3 and Column 10 or 11 of table A of Chapter 3.2.

4.2.1.9.2. The maximum degree of filling (in %) for general use is determined by the formula:

$$\text{Degree of filling} = \frac{97}{1 + \alpha(t_r - t_f)}$$

4.2.1.9.3. The maximum degree of filling (in %) for liquids of Class 6.1 and Class 8, in Packing Groups I and II, and liquids with an absolute vapour pressure of more than 175 kPa (1,75 bar) at 65 °C, is determined by the formula:

$$\text{Degree of filling} = \frac{95}{1 + \alpha(t_r - t_f)}$$

4.2.1.9.4. In these formulae, α is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t_f) and the maximum mean bulk temperature during carriage (t_r) (both in °C). For liquids carried under ambient conditions α could be calculated by the formula:

$$\alpha = \frac{d_{15} - d_{50}}{35\ d_{50}}$$

in which d_{15} and d_{50} are the densities of the liquid at 15 °C and 50 °C, respectively.

4.2.1.9.4.1 The maximum mean bulk temperature (t_r) shall be taken as 50 °C except that, for journeys under temperate or extreme climatic conditions, the competent authorities concerned may agree to a lower or require a higher temperature, as appropriate.

4.2.1.9.5. The requirements of 4.2.1.9.2 to 4.2.1.9.4.1 do not apply to portable tanks which contain substances maintained at a temperature above 50 °C during carriage (e.g. by means of a heating device). For portable tanks equipped with a heating device, a temperature regulator shall be used to ensure the maximum degree of filling is not more than 95 % at any time during carriage.

4.2.1.9.5.1 The maximum degree of filling (in %) for liquids carried under elevated temperature conditions is determined by the formula:

$$\text{Degree of filling} = 95 \frac{d_r}{d_f}$$

in which df and dr are the densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during carriage respectively.

4.2.1.9.6. Portable tanks shall not be offered for carriage:

(a) With a degree of filling, for liquids having a viscosity less than 2 680 mm^2/s at 20 °C or maximum temperature of the substance during carriage in the case of heated substance, of more than 20 % but less than 80 % unless the shells of portable tanks are divided, by partitions or surge plates, into sections of not more than 7 500 litres capacity;

(b) With residue of goods previously carried adhering to the outside of the shell or service equipment;

(c) When leaking or damaged to such an extent that the integrity of the portable tank or its lifting or securing arrangements may be affected; and

(d) Unless the service equipment has been examined and found to be in good working order.

4.2.1.9.7. Forklift pockets of portable tanks shall be closed off when the tank is filled. This provision does not apply to portable tanks which according to 6.7.3.13.4 need not be provided with a means of closing off the forklift pockets.

4.2.1.10. Additional provisions applicable to the carriage of Class 3 substances in portable tanks

4.2.1.10.1. All portable tanks intended for the carriage of flammable liquids shall be closed and be fitted with relief devices in accordance with 6.7.2.8 to 6.7.2.15.

4.2.1.10.1.1 For portable tanks intended for use only on land, open venting systems may be used when allowed under Chapter 4.3.

4.2.1.11. Additional provisions applicable to the carriage of substances of Classes 4.1, 4.2 or 4.3 (other than Class 4.1 self-reactive substances) in portable tanks

(reserved)

NOTE. For Class 4.1 self-reactive substances, see 4.2.1.13.1.

4.2.1.12. Additional provisions applicable to the carriage of substances of Class 5.1 in portable tanks

(reserved)

4.2.1.13. Additional provisions applicable to the carriage of substances of Class 5.2 and self-reactive substances of Class 4.1 in portable tanks

4.2.1.13.1. Each substance shall have been tested and a report submitted to the competent authority of the country of origin for approval. Notification thereof shall be sent to the competent authority of the country of destination. The notification shall contain relevant transport information and the report with test results. The tests undertaken shall include those necessary:

(a) To prove the compatibility of all materials normally in contact with the substance during carriage;

(b) To provide data for the design of the pressure and emergency relief devices taking into account the design characteristics of the portable tank.

Any special requirement necessary for safe transport of the substance shall be clearly described in the report.

4.2.1.13.2. The following requirements apply to portable tanks intended for the carriage of Type F organic peroxides or Type F self-reactive substances with a Self-Accelerating Decomposition Temperature (SADT) of 55 °C or more. In case of conflict these requirements prevail over those specified in 6.7.2. Emergencies to be taken into account are self-accelerating decomposition of the substance and fire-engulfment as described in 4.2.1.13.8.

4.2.1.13.3. Additional requirements for the carriage of organic peroxides or self-reactive substances with a SADT less than 55 °C in portable tanks shall be specified by the competent authority of the country of origin. Notification thereof shall be sent to the competent authority of the country of destination.

4.2.1.13.4. The portable tank shall be designed for a test pressure of at least 0,4 MPa (4 bar).

4.2.1.13.5. Portable tanks shall be fitted with temperature sensing devices.

4.2.1.13.6. Portable tanks shall be fitted with pressure-relief devices and emergency-relief devices. Vacuum-relief devices may also be used. Pressure-relief devices shall operate at pressures determined according to both the properties of the substance and the construction characteristics of the portable tank. Fusible elements are not allowed in the shell.

4.2.1.13.7. The pressure-relief devices shall consist of spring-loaded valves fitted to prevent significant build-up within the portable tank of the decomposition products and vapours released at a temperature of 50 °C. The capacity and start-to-discharge pressure of the relief valves shall be based on the results of the tests specified in 4.2.1.13.1. The start-to-discharge pressure shall, however, in no case be such that liquid would escape from the valve(s) if the portable tank were overturned.

4.2.1.13.8. The emergency-relief devices may be of the spring-loaded or frangible types, or a combination of the two, designed to vent all the decomposition products and vapours evolved during a period of not less than one hour of complete fire-engulfment as calculated by the following formula:

$$q = 70691 \times F \times A^{0,82}$$

where:

q = heat absorption (W)

A = wetted area (m^2)

F = insulation factor

F = 1 for non-insulated vessels

$$F = \frac{U\,(923 - T)}{47032} \text{ for insulated vessels}$$

where:

K = heat conductivity of insulation layer [$W \cong m^{-1} \cong K^{-1}$]

L = thickness of insulation layer [m]

U = K/L = heat transfer coefficient of the insulation [$W \cong m^{-2} \cong K^{-1}$]

T = temperature of substance at relieving conditions [K]

The start-to-discharge pressure of the emergency-relief device(s) shall be higher than that specified in 4.2.1.13.7 and based on the results of the tests referred to in 4.2.1.13.1. The emergency-relief devices shall be dimensioned in such a way that the maximum pressure in the tank never exceeds the test pressure of the portable tank.

NOTE. An example of a method to determine the size of emergency-relief devices is given in Appendix 5 of the Manual of Tests and Criteria.

4.2.1.13.9. For insulated portable tanks the capacity and setting of emergency-relief device(s) shall be determined assuming a loss of insulation from 1 % of the surface area.

4.2.1.13.10. Vacuum-relief devices and spring-loaded valves shall be provided with flame arresters. Due attention shall be paid to the reduction of the relief capacity caused by the flame arrester.

4.2.1.13.11. Service equipment such as valves and external piping shall be so arranged that no substance remains in them after filling the portable tank.

4.2.1.13.12. Portable tanks may be either insulated or protected by a sun-shield. If the SADT of the substance in the portable tank is 55 °C or less, or the portable tank is constructed of aluminium, the portable tank shall be completely insulated. The outer surface shall be finished in white or bright metal.

4.2.1.13.13. The degree of filling shall not exceed 90 % at 15 °C.

4.2.1.13.14. The marking as required in 6.7.2.20.2 shall include the UN number and the technical name with the approved concentration of the substance concerned.

4.2.1.13.15. Organic peroxides and self-reactive substances specifically listed in portable tank instruction T23 in 4.2.4.2.6 may be carried in portable tanks.

4.2.1.14. Additional provisions applicable to the carriage of substances of Class 6.1 in portable tanks

(reserved)

4.2.1.15. Additional provisions applicable to the carriage of Class 7 material in portable tanks

4.2.1.15.1 Portable tanks used for the carriage of radioactive material shall not be used for the carriage of other goods.

4.2.1.15.2 The degree of filling for portable tanks shall not exceed 90 % or, alternatively, any other value approved by the competent authority.

4.2.1.16. Additional provisions applicable to the carriage of substances of Class 8 in portable tanks

4.2.1.16.1 Pressure-relief devices of portable tanks used for the carriage of substances of Class 8 shall be inspected at intervals not exceeding one year.

4.2.1.17. Additional provisions applicable to the carriage of substances of Class 9 in portable tanks

(reserved)

4.2.2. *General provisions for the use of portable tanks for the carriage of non-refrigerated liquefied gases*

4.2.2.1. This section provides general provisions applicable to the use of portable tanks for the carriage of non-refrigerated liquefied gases.

4.2.2.2. Portable tanks shall conform to the design, construction, inspection and testing requirements detailed in 6.7.3. Non-refrigerated liquefied gases shall be carried in portable tanks conforming to portable tank instruction T50 as described in 4.2.4.2.6 and any portable tank special provisions assigned to specific non-refrigerated liquefied gases in Column 11 of table A of Chapter 3.2 and described in 4.2.4.3.

4.2.2.3. During carriage, portable tanks shall be adequately protected against damage to the shell and service equipment resulting from lateral and longitudinal impact and overturning. If the shell and service equipment are so constructed as to withstand impact or overturning it need not be protected in this way. Examples of such protection are given in 6.7.3.13.5.

4.2.2.4. Certain non-refrigerated liquefied gases are chemically unstable. They are accepted for carriage only when the necessary steps have been taken to prevent their dangerous decomposition, transformation or polymerization during carriage. To this end, care shall in particular be taken to ensure that portable tanks do not contain any non-refrigerated liquefied gases liable to promote these reactions.

4.2.2.5. Unless the name of the dangerous gas(es) being carried appears on the metal plate described in 6.7.3.16.2, a copy of the certificate specified in 6.7.3.14.1 shall be made available upon a competent authority request and readily provided by the consignor, consignee or agent, as appropriate.

4.2.2.6. Empty portable tanks not cleaned and not gas-free shall comply with the same requirements as portable tanks filled with the previous non-refrigerated liquefied gas.

4.2.2.7. Filling

4.2.2.7.1 Prior to filling the filler shall ensure that the portable tank is approved for the nonrefrigerated liquefied gas to be carried and that the portable tank is not loaded with nonrefrigerated liquefied gases which, in contact with the materials of the shell, gaskets, service equipment and any protective liner, are likely to react dangerously with them to form dangerous products or appreciably weaken the material. During filling, the temperature of the non-refrigerated liquefied gas shall fall within the limits of the design temperature range.

4.2.2.7.2 The maximum mass of non-refrigerated liquefied gas per litre of shell capacity (kg/l) shall not exceed the density of the non-refrigerated liquefied gas at 50 °C multiplied by 0,95. Furthermore, the shell shall not be liquid-full at 60 °C.

4.2.2.7.3 Portable tanks shall not be filled above their maximum permissible gross mass and the maximum permissible load mass specified for each gas to be carried.

4.2.2.8. Portable tanks shall not be offered for carriage:

(a) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the portable tank;

(b) When leaking;

(c) When damaged to such an extent that the integrity of the tank or its lifting or securing arrangements may be affected; and

(d) Unless the service equipment has been examined and found to be in good working order.

4.2.2.9. Forklift pockets of portable tanks shall be closed off when the tank is filled. This requirement does not apply to portable tanks which according to 6.7.4.12.4 need not be provided with a means of closing off the forklift pockets.

4.2.3. *General requirements for the use of portable tanks for the carriage of refrigerated liquefied gases*

4.2.3.1. This section provides general requirements applicable to the use of portable tanks for the carriage of refrigerated liquefied gases.

4.2.3.2. Portable tanks shall conform to the design, construction, inspection and testing requirements detailed in 6.7.4. Refrigerated liquefied gases shall be carried in portable tanks conforming to portable tank instruction T75 as described in 4.2.4.2.6 and the portable tank special requirements assigned to each refrigerated liquefied gas in Column 11 of table A of Chapter 3.2.

4.2.3.3. During carriage, portable tanks shall be adequately protected against damage to the shell and service equipment resulting from lateral and longitudinal impact and overturning. If the shell and service equipment are so constructed as to withstand impact or overturning it need not be protected in this way. Examples of such protection are provided in 6.7.4.12.5.

4.2.3.4. Unless the name of the gas(es) being carried appears on the metal plate described in 6.7.4.15.2, a copy of the certificate specified in 6.7.4.13.1 shall be made available upon a competent authority request and readily provided by the consignor, consignee or agent, as appropriate.

4.2.3.5. Empty portable tanks not cleaned and not gas-free shall comply with the same requirements as portable tanks filled with the previous substance.

4.2.3.6. Filling

4.2.3.6.1 Prior to filling the consignor shall ensure that the portable tank is approved for the refrigerated liquefied gas to be carried and that the portable tank is not loaded with refrigerated liquefied gases which in contact with the materials of the shell, gaskets, service equipment and any protective lining, are likely to react dangerously with them to form dangerous products or appreciably weaken the material. During filling, the temperature of the refrigerated liquefied gas shall be within the limits of the design temperature range.

4.2.3.6.2 In estimating the initial degree of filling the necessary holding time for the intended journey including any delays which might be encountered shall be taken into consideration. The initial degree of filling of the shell, except as provided for in 4.2.3.6.3 and 4.2.3.6.4, shall be such that if the contents, except helium, were to be raised to a temperature at which the vapour pressure is equal to the maximum allowable working pressure (MAWP) the volume occupied by liquid would not exceed 98 %.

4.2.3.6.3 Shells intended for the carriage of helium can be filled up to but not above the inlet of the pressure-relief device.

4.2.3.6.4 A higher initial degree of filling may be allowed, subject to approval by the competent authority, when the intended duration of carriage is considerably shorter than the holding time.

4.2.3.7. Actual holding time

4.2.3.7.1 The actual holding time shall be calculated for each journey in accordance with a procedure recognized by the competent authority, on the basis of the following:

(a) The reference holding time for the refrigerated liquefied gas to be carried (see 6.7.4.2.8.1) (as indicated on the plate referred to in 6.7.4.15.1);

(b) The actual filling density;

(c) The actual filling pressure;

(d) The lowest set pressure of the pressure limiting device(s).

4.2.3.7.2 The actual holding time shall be marked either on the portable tank itself or on a metal plate firmly secured to the portable tank, in accordance with 6.7.4.15.2.

4.2.3.8. Portable tanks shall not be offered for carriage:

(a) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;

(b) When leaking;

(c) When damaged to such an extent that the integrity of the portable tank or its lifting or securing arrangements may be affected;

(d) Unless the service equipment has been examined and found to be in good working order;

(e) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined in accordance with 4.2.3.7 and the portable tank is marked in accordance with 6.7.4.15.2; and

(f) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time.

4.2.3.9. Forklift pockets of portable tanks shall be closed off when the tank is filled. This requirement does not apply to portable tanks which according to 6.7.4.12.4, as appropriate, need not be provided with a means of closing off the forklift pockets.

4.2.4. *Portable tank instructions and special requirements*

4.2.4.1. General

4.2.4.1.1 This section includes the portable tank instructions and special requirements applicable to dangerous goods authorized to be carried in portable tanks. Each portable tank instruction is identified by an alpha-numeric code (e.g. T1). Column 10 of table A of Chapter 3.2 indicates the portable tank instruction that shall be used for each substance permitted for carriage in a portable tank. When no portable tank instruction appears in Column 10 for a specific dangerous goods entry then carriage of the substance in portable tanks is not permitted unless a competent authority approval is granted as detailed in 6.7.1.3. Portable tank special requirements are assigned to specific dangerous goods in Column 11 of table A of Chapter 3.2. Each portable tank special requirement is identified by an alphanumeric code (e.g. TP1). A listing of the portable tank special requirements is provided in 4.2.4.3.

4.2.4.2. Portable tank instructions

4.2.4.2.1. Portable tank instructions apply to substances of Classes 2 to 9. Portable tank instructions provide specific information relevant to portable tank requirements applicable to specific substances. These requirements shall be met in addition to the general requirements in this Chapter and Chapter 6.7.

4.2.4.2.2. For substances of Classes 3 to 9, the portable tank instructions indicate the applicable minimum test pressure, the minimum shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. In T23, self-reactive substances of Class 4.1 and organic peroxides of Class 5.2 permitted to be carried in portable tanks are listed.

4.2.4.2.3. Non-refrigerated liquefied gases are assigned to portable tank instruction T50. T50 provides the maximum allowable working pressures, requirements for openings below the level of the liquid, pressure relief requirements and maximum degree of filling requirements for non-refrigerated liquefied gases permitted for carriage in portable tanks.

4.2.4.2.4. Refrigerated liquefied gases are assigned to portable tank instruction T75.

4.2.4.2.5. Determination of the appropriate portable tank instruction

When a specific portable tank instruction is specified in Column 10 for a specific substance additional portable tanks which possess minimum test pressures, greater wall thicknesses, more stringent bottom opening and pressure-relief device arrangements may be used. The following guidelines apply to determining the appropriate portable tanks which may be used for the carriage of particular substances:

Portable tank instructions specified	Portable tank instructions also permitted
T1	T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T2	T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T3	T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T4	T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T5	T10, T14, T19, T20, T22
T6	T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T7	T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T8	T9, T10, T13, T14, T19, T20, T21, T22
T9	T10, T13, T14, T19, T20, T21, T22
T10	T14, T19, T20, T22
T11	T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T12	T14, T16, T18, T19, T20, T22
T13	T14, T19, T20, T21, T22
T14	T19, T20, T22
T15	T16, T17, T18, T19, T20, T21, T22
T16	T18, T19, T20, T22
T17	T18, T19, T20, T21, T22
T18	T19, T20, T22
T19	T20, T22
T20	T22
T21	T22
T22	None
T23	None

4.2.4.2.6. Portable tank instructions

T1 - T22	Portable tank instructions	*T1 - T22*

These portable tank instructions apply to liquid and solid substances of Classes 3 to 9. The general requirements of section 4.2.1 and the requirements of section 6.7.2 shall be met

Portable tank instruction	Minimum test pressure (bar)	Minimum shell thickness (in mm reference steel) (see 6.7.2.4)	Pressure-relief requirements (see 6.7.2.8)	Bottom opening requirements (see 6.7.2.6)
T1	1,5	See 6.7.2.4.2	Normal	See 6.7.2.6.2
T2	1,5	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T3	2,65	See 6.7.2.4.2	Normal	See 6.7.2.6.2
T4	2,65	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T5	2,65	See 6.7.2.4.2	See 6.7.2.8.3	Not allowed
T6	4	See 6.7.2.4.2	Normal	See 6.7.2.6.2
T7	4	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T8	4	See 6.7.2.4.2	Normal	Not allowed
T9	4	6 mm	Normal	Not allowed
T10	4	6 mm	See 6.7.2.8.3	Not allowed
T11	6	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T12	6	See 6.7.2.4.2	See 6.7.2.8.3	See 6.7.2.6.3
T13	6	6 mm	Normal	Not allowed
T14	6	6 mm	See 6.7.2.8.3	Not allowed
T15	10	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T16	10	See 6.7.2.4.2	See 6.7.2.8.3	See 6.7.2.6.3
T17	10	6 mm	Normal	See 6.7.2.6.3
T18	10	6 mm	See 6.7.2.8.3	See 6.7.2.6.3
T19	10	6 mm	See 6.7.2.8.3	Not allowed
T20	10	8 mm	See 6.7.2.8.3	Not allowed
T21	10	10 mm	Normal	Not allowed
T22	10	10 mm	See 6.7.2.8.3	Not allowed

T23	PORTABLE TANK INSTRUCTION					*T23*
This portable tank instruction applies to self-reactive substances of Class 4.1 and organic peroxides of Class 5.2. The general requirements of section 4.2.1 and the requirements of section 6.7.2 shall be met. The additional requirements applicable to self-reactive substances of Class 4.1 and organic peroxides of Class 5.2 in 4.2.1.13 shall also be met.						
UN No.	Substance	Minimum test pressure (bar)	Minimum shell thickness (in mm reference steel)	Bottom opening requirements	Pressure-relief requirements	Degree of filling
3109	ORGANIC PEROXIDE TYPE F, LIQUID tert-Butyl hydro-peroxide ([a]), not more than 72 % with water Cumyl hydroperoxide, not more than 90 % in diluent type A Di-tert-butyl peroxide, not more than 32 % in diluent type A Isopropyl cumyl hydroperoxide, not more than 72 % in diluent type A p-Menthyl hydroperoxide, not more than 72 % in diluent type A Pinanyl hydroperoxide, not more than 56 % in diluent type A	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13
3110	ORGANIC PEROXIDE TYPE F, SOLID Dicumyl peroxide ([b])	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13
3229	SELF-REACTIVE LIQUID TYPE F	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.24.2.1.1-3.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13
3230	SELF-REACTIVE SOLID TYPE F	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13
([a]) Provided that steps have been taken to achieve the safety equivalence of 65 % tert-Butyl hydroperoxide and 35 % water. ([b]) Maximum quantity per receptacle 2 000 kg.						

T50		PORTABLE TANK INSTRUCTION			*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
1005	Ammonia, anhydrous	29,0 25,7 22,0 19,7	Allowed	See 6.7.3.7.3	0,53
1009	Bromotriflouromethane-(Refrigerant gas R 13B1)	38,0 34,0 30,0 27,5	Allowed	Normal	1,13
1010	Butadienes, stabilized	7,5 7,0 7,0 7,0	Allowed	Normal	0,55
1011	Butane	7,0 7,0 7,0 7,0	Allowed	Normal	0,51
1012	Butylene	8,0 7,0 7,0 7,0	Allowed	Normal	0,53
1017	Chlorine	19,0 17.0 15,0 13.5	Not allowed	See 6.7.3.7.3	1,25
1018	Chlorodifluoromethane (Refrigerant gas R 22)	26,0 24,0 21,0 19,0	Allowed	Normal	1,03
1020	Chloropentafluoroethane (Refrigerant gas R 115)	23,0 20,0 18,0 16,0	Allowed	Normal	1,06
1021	1-Chloro-1,2,2,2-tetrafluoro-ethane (Refrigerant gas R 124)	10,3 9,8 7,9 7,0	Allowed	Normal	1,20

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
1027	Cyclopropane	18,0 16,0 14,5 13,0	Allowed	Normal	0,53
1028	Dichlorodifluoromethane (Refrigerant gas R 12)	16,0 15,0 13,0 11,5	Allowed	Normal	1,15
1029	Dichlorofluoromethane (Refrigerant gas R21)	7,0 7,0 7,0 7,0	Allowed	Normal	1,23
1030	1,1-Difluoroethane (Refrigerant gas 152a)	16,0 14,0 12,4 11,0	Allowed	Normal	0,79
1032	Dimethylamine, anhydrous	7,0 7,0 7,0 7,0	Allowed	Normal	0,59
1033	Dimethylether	15,5 13,8 12,0 10,6	Allowed	Normal	0,58
1036	Ethylamine	7,0 7,0 7,0 7,0	Allowed	Normal	0,61
1037	Ethyl chloride	7,0 7,0 7,0 7,0	Allowed	Normal	0,80
1040	Ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 °C	— — — 10,0	Not allowed	See 6.7.3.7.3	0,78

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
1041	Ethylene oxide and carbon dioxide mixture with more than 9 % but not more than 87 % ethylene oxide	See MAWP definition in 6.7.3.1	Allowed	Normal	(see 4.2.2.7)
1055	Isobutylene	8,1 7,0 7,0 7,0	Allowed	Normal	0,52
1060	Methylacetylene and propadiene mixture, stabilized	28,0 24,5 22,0 20,0	Allowed	Normal	0,43
1061	Methylamine, anhydrous	10,8 9,6 7,8 7,0	Allowed	Normal	0,58
1062	Methyl bromide	7,0 7,0 7,0 7,0	Not allowed	See 6.7.3.7.3	1,51
1063	Methyl chloride (Refrigerant gas R 40)	14,5 12,7 11,3 10,0	Allowed	Normal	0,81
1064	Methyl mercaptan	7,0 7,0 7,0 7,0	Not allowed	See 6.7.3.7.3	0,78
1067	Dinitrogen tetroxide (Nitrogen dioxide)	7,0 7,0 7,0 7,0	Not allowed	See 6.7.3.7.3	1,30
1075	Petroleum gases, liquefied	See MAWP definition in 6.7.3.1	Allowed	Normal	See 4.2.2.7
1077	Propylene	28,0 24,5 22,0 20,0	Allowed	Normal	0,43

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
1078	Refrigerant gas, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	Normal	See 4.2.2.7
1079	Sulphur dioxide	11,6 10,3 8,5 7,6	Not allowed	See 6.7.3.7.3	1,23
1082	Trifluorochloroethylene, stabilized	17,0 15,0 13,1 11,6	Not allowed	See 6.7.3.7.3	1,13
1083	Trimethylamine, anhydrous	7,0 7,0 7,0 7,0	Allowed	Normal	0,56
1085	Vinyl bromide, stabilized	7,0 7,0 7,0 7,0	Allowed	Normal	1,37
1086	Vinyl chloride, stabilized	10,6 9,3 8,0 7,0	Allowed	Normal	0,81
1087	Vinyl methyl ether, stabilized	7,0 7,0 7,0 7,0	Allowed	Normal	0,67
1581	Chloropicrin and methyl bromide mixture	7,0 7,0 7,0 7,0	Not allowed	See 6.7.3.7.3	1,51
1582	Chloropicrin and methyl chloride mixture	19,2 16,9 15,1 13,1	Not allowed	See 6.7.3.7.3	0,81
1858	Hexafluoropropylene (Refrigerant gas R 1216)	19,2 16,9 15,1 13,1	Allowed	Normal	1,11

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
1912	Methyl chloride and methylene chloride mixture	15,2 13,0 11,6 10,1	Allowed	Normal	0,81
1958	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Refrigerant gas R 114)	7,0 7,0 7,0 7,0	Allowed	Normal	1,30
1965	Hydrocarbon gas, mixture, liquefied, n.o.s.	See definitie van MAWP in 6.7.3.1	Allowed	Normal	See 4.2.2.7
1969	Isobutane	8,5 7,5 7,0 7,0	Allowed	Normal	0,49
1973	Chlorodifluoromethane and chloropenta- fluoroethane mixture with fixed boiling point, with approximately 49 % chlorodifluoromethane (Refrigerant gas R 502)	28,3 25,3 22,8 20,3	Allowed	Normal	1,05
1974	Chlorodifluorobromomethane (Refrigerant gas R 12B1)	7,4 7,0 7,0 7,0	Allowed	Normal	1,61
1976	Octafluorocyclobutane (Refrigerant gas RC 318)	8,8 7,8 7,0 7,0	Allowed	Normal	1,34
1978	Propane	22,5 20,4 18,0 16,5	Allowed	Normal	0,42
1983	1-Chloro-2,2,2-trifluoroethane (Refrigerant gas R 133a)	7,0 7,0 7,0 7,0	Allowed	Normal	1,18

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
2035	1,1,1-Trifluoroethane (Refrigerant gas R 143a)	31,0 27,5 24,2 21,8	Allowed	Normal	0,76
2424	Octafluoropropane (Refrigerant gas R 218)	23,1 20,8 18,6 16,6	Allowed	Normal	1,07
2517	1-Chloro-1,1-difluoroethane (Refrigerant gas R 142b)	8,9 7,8 7,0 7.0	Allowed	Normal	0,99
2602	Dichlorodifluoromethane and 1,1-difluoroethane azeotropic mixture with approximately 74 % dichlorodifluoromethane (Refrigerant gas R 500)	20,0 18,0 16,0 14,5	Allowed	Normal	1,01
3057	Trifluoroacetyl chloride	14,6 12,9 11,3 9,9	Not allowed	6.7.3.7.3	1,17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12,5 % ethylene oxide	14,0 12,0 11,0 9,0	Allowed	6.7.3.7.3	1,09
3153	Perfluoro (methyl vinyl) ether	14,3 13,4 11,2 10,2	Allowed	Normal	1,14
3159	1,1,1,2-Tetrafluoroethane (Refrigerant gas R 134a)	17,7 15,7 13,8 12,1	Allowed	Normal	1,04
3161	Liquefied gas, flammable, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	Normal	See 4.2.2.7

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
3163	Liquefied gas, n.o.s.	See definitie van MAWP in 6.7.3.1	Allowed	Normal	See 4.2.2.7
3220	Pentafluoroethane (Refrigerant gas R 125)	34,4 30,8 27,5 24,5	Allowed	Normal	0,95
3252	Difluoromethane (Refrigerant gas R 32)	43,0 39,0 34,4 30,5	Allowed	Normal	0,78
3296	Heptafluoropropane (Refrigerant gas R 227)	16,0 14,0 12,5 11,0	Allowed	Normal	1,20
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8,8 % ethylene oxide	8,1 7,0 7,0 7,0	Allowed	Normal	1,16
3298	Ethylene oxide and penta fluoroethane mixture, with not more than 7,9 % ethylene oxide	25,9 23,4 20,9 18,6	Allowed	Normal	1,02
3299	Ethylene oxide and tetra fluoroethane mixture, with not more than 5,6 % ethylene oxide	16,7 14,7 12,9 11,2	Allowed	Normal	1,03
3318	Ammonia solution, relative density less than 0,880 at 15 °C in water, with more than 50 % ammonia	See definitie van MAWP in 6.7.3.1	Allowed	See 6.7.3.7.3	See 4.2.2.7
3337	Refrigerant gas R 404A	31,6 28,3 25,3 22,5	Allowed	Normal	0,84
3338	Refrigerant gas R 407A	31,3 28,1 25,1 22,4	Allowed	Normal	0,95

T50	PORTABLE TANK INSTRUCTION *(cont'd)*				*T50*
This portable tank instruction applies to non-refrigerated liquefied gases. The general requirements of section 4.2.2 and the requirements of section 6.7.3 shall be met.					
UN No.	Non-refrigerated liquefied gases	Max allowable working pressure (bar) Small; Big; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio (kg/l)
3339	Refrigerant gas R 407B	33,0 29,6 26,5 23,6	Allowed	Normal	0,95
3340	Refrigerant gas R 407C	29,9 26,8 23.9 21,3	Allowed	Normal	0,95

T75	PORTABLE TANK INSTRUCTION	*T75*
This portable tank instruction applies to refrigerated liquefied gases. The general requirements of section 4.2.3 and the requirements of section 6.7.4 shall be met.		

4.2.4.3. Portable tank special provisions

Portable tank special provisions Portable tank special provisions are assigned to certain substances to indicate requirements which are in addition to or in lieu of those provided by the portable tank instructions or the requirements in Chapter 6.7. Portable tank special provisions are designated using an alphanumeric code beginning with the letters TP (tank provision) and are assigned to specific substances in Column 11 of table A of Chapter 3.2. The following is a list of the portable tank special provisions:

TP1 The degree of filling prescribed in 4.2.1.9.2 shall not be exceeded

$$\left(\text{Degree of filling} = \frac{97}{1 + \alpha(t_r - t_f)}\right)$$

TP2 The degree of filling prescribed in 4.2.1.9.3 shall not be exceeded

$$\left(\text{Degree of filling} = \frac{95}{1 + \alpha(t_r - t_f)}\right)$$

TP3 For liquids carried under elevated temperature conditions, the degree of filling prescribed in 4.2.1.9.5.1 shall not be exceeded

$$\left(\text{Degree of filling} = 95\frac{d_r}{d_f}\right)$$

TP4 The degree of filling shall not exceed 90 % or, alternatively, any other value approved by the competent authority (see 4.2.1.15.2).

TP5 (Reserved)

TP6 To prevent the tank bursting in any event, including fire engulfment, it shall be provided with pressure-relief devices which are adequate in relation to the capacity of the tank and to the nature of the substance carried. The device shall also be compatible with the substance.

TP7 Air shall be eliminated from the vapour space by nitrogen or other means.

TP8 The test pressure may be reduced to 1,5 bar when the flash-point of the substances carried is greater than 0 °C.

TP9 A substance under this description shall only be carried in a portable tank under an approval granted by the competent authority.

TP10 A lead lining, not less than 5 mm thick, which shall be tested annually, or another suitable lining material approved by the competent authority is required.

TP11 (Reserved)

TP12 Highly corrosive to steel.

TP13 Self-contained breathing apparatus shall be provided when this substance is carried.

TP14 (Reserved)

TP15 (Reserved)

TP16 The tank shall be fitted with a special device to prevent under-pressure and excess pressure during normal conditions of carriage. This device shall be approved by the competent authority. Pressure-relief requirements are as indicated in 6.7.2.8.3 to prevent crystallization of the product in the pressure-relief valve.

TP17 Only inorganic non-combustible materials shall be used for thermal insulation of the tank.

TP18 Temperature shall be maintained between 18 °C and 40 °C. Portable tanks containing solidified methacrylic acid shall not be reheated during carriage.

TP19 The calculated wall thickness shall be increased by 3 mm. Wall thickness shall be verified ultrasonically at intervals midway between periodic hydraulic tests.

TP20 This substance shall only be carried in insulated tanks under a nitrogen blanket.

TP21 The wall thickness shall be not less than 8 mm. Tanks shall be hydraulically tested and internally inspected at intervals not exceeding 2,5 years.

TP22 Lubricant for joints or other devices shall be oxygen compatible.

TP23 Carriage permitted under special conditions prescribed by the competent authority.

TP24 The portable tank may be fitted with a device located under maximum filling conditions in the vapour space of the shell to prevent the build up of excess pressure due to the slow decomposition of the substance carried. This device shall also prevent an unacceptable amount of leakage of liquid in the case of overturning or entry of foreign matter into the tank. This device shall be approved by the competent authority or its authorized body.

TP25 (Reserved)

TP26 When carried under heated conditions, the heating device shall be fitted outside the shell. For UN 3176 this requirement only applies when the substance reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar may be used if it is shown that a test pressure of 4 bar or less is acceptable according to the test pressure definition in 6.7.2.1.

TP28 A portable tank having a minimum test pressure of 2,65 bar may be used if it is shown that a test pressure of 2,65 bar or less is acceptable according to the test pressure definition in 6.7.2.1.

TP29 A portable tank having a minimum test pressure of 1,5 bar may be used if it is shown that a test pressure of 1,5 bar or less is acceptable according to the test pressure definition in 6.7.2.1.

Chapter 4.3

Use of tank wagons, demountable tanks, tank-containers and swap bodies with shells made of metallic materials, and battery-wagons and multiple-element gas containers (MEGCs)

NOTE. For portable tanks see Chapter 4.2; for fibre-reinforced plastics tank-containers, see Chapter 4.4.

4.3.1. *Scope*

4.3.1.1. Requirements which take up the whole width of the page apply both to tank wagons, demountable tanks and battery-wagons, and to tank-containers, tank swap bodies and MEGCs. Requirements contained in a single column apply only to:

— tank wagons, demountable tanks and battery-wagons (left-hand column);

— tank-containers, tank swap bodies and MEGCs (right-hand column).

4.3.1.2. These requirements apply to

tank-wagons, demountable tanks and battery-wagons	tank-containers, tank swap bodies and MEGCs

used for the carriage of gaseous, liquid, powdery or granular substances.

4.3.1.3. Section 4.3.2 lists the requirements applicable to tank wagons, demountable tanks, tankcontainers and tank swap bodies, intended for the carriage of substances of all classes, and to battery-wagons and MEGCs intended for the carriage of gases of Class 2. Sections 4.3.3 and 4.3.4 contain special provisions adding to or amending the requirements of 4.3.2.

4.3.1.4. For requirements concerning the construction, equipment, type approval, tests and marking, see Chapter 6.8.

4.3.1.5. For transitional measures concerning the use of this Chapter, see

1.6.3	1.6.4

4.3.2. *Requirements applicable to all classes*

4.3.2.1. Use

4.3.2.1.1 A substance subject to this Directive may be carried in tank-wagons, demountable tanks, batterywagons, tank-containers, tank swap bodies and MEGCs only when provision is made for a tank code according to 4.3.3.1.1 and 4.3.4.1.1 in column (12) of Table A in Chapter 3.2.

4.3.2.1.2 The required type of tank, battery-wagon and MEGC is given in code form in column (12) of Table A in Chapter 3.2. The identification codes appearing there are made up of letters and numbers in a given order. The explanations for reading the four parts of the code are given in 4.3.3.1.1 (when the substance to be carried belongs to Class 2) and in 4.3.4.1.1 (when the substance to be carried belongs to Classes 3 to 9) ([1])

4.3.2.1.3 The required type according to 4.3.2.1.2 corresponds to the least stringent construction requirements which are acceptable for the dangerous substance in question unless otherwise prescribed in this chapter or in chapter 6.8. It is possible to use tanks corresponding to codes prescribing a higher minimum calculation pressure, or more stringent requirements for filling or discharge openings or for safety valves/devices (see 4.3.3.1.1 for Class 2 and 4.3.4.1.1 for Classes 3 to 9).

4.3.2.1.4 For certain substances, tanks, battery-wagons or MEGCs are subject to additional requirements which are included as special provisions in column (13) of Table A in Chapter 3.2.

4.3.2.1.5 Tanks, battery-wagons and MEGCs shall not be loaded with any dangerous substances other than those for the carriage of which they have been approved (see 6.8.2.3.1) and which, in contact with the materials of the shell, gaskets, equipment and protective linings, are not liable to react dangerously with them (see definition of 'dangerous reaction' in 1.2.1), to form dangerous products or appreciably to weaken these materials ([2]).

4.3.2.1.6 Foodstuffs shall not be carried in tanks used for dangerous substances unless the necessary steps have been taken to prevent any harm to public health.

([1]) An exception is made for tanks intended for the carriage of substances of Class 5.2 or material of Class 7 (see 4.3.4.1.3).

([2]) It may be necessary to consult the manufacturer of the substance and the competent authority for guidance on the compatibility of the substance with the materials of the tank, battery-vehicle or MEGC.

4.3.2.2. Degree of filling

4.3.2.2.1 The following degrees of filling shall not be exceeded in tanks intended for the carriage of liquids at ambient temperatures:

(a) for flammable substances without additional risks (e.g. toxicity or corrosivity), in tanks with a venting system or with safety valves (even where preceded by a bursting disc):

$$\text{degree of filling} = \frac{100}{1 + \alpha(50 - t_F)} \text{ \% of capacity}$$

(b) for toxic or corrosive substances (whether flammable or not) in tanks with a venting system or with safety valves (even where preceded by a bursting disc):

$$\text{degree of filling} = \frac{98}{1 + \alpha(50 - t_F)} \text{ \% of capacity}$$

(c) for flammable substances and for slightly toxic or corrosive substances (whether flammable or not) in hermetically closed tanks without a safety device:

$$\text{degree of filling} = \frac{97}{1 + \alpha(50 - t_F)} \text{ \% of capacity}$$

(d) for highly toxic, toxic, highly corrosive or corrosive substances (whether flammable or not) in hermetically closed tanks without a safety device:

$$\text{degree of filling} = \frac{95}{1 + \alpha(50 - t_F)} \text{ \% of capacity}$$

4.3.2.2.2 In these formulae, is the mean coefficient of cubical expansion of the liquid between 15 °C and 50 °C, i.e. for a maximum variation in temperature of 35 °C.

a is calculated by the formula:

$$\alpha = \frac{d_{15} - d_{50}}{35 \times d_{50}}$$

where d_{15} and d_{50} are the relative densities of the liquid at 15 °C and 50 °C respectively and t_F is the mean temperature of the liquid during filling.

4.3.2.2.3 The requirements of 4.3.2.2.1 (a) to (d) above shall not apply to tanks whose contents are, by means of a heating device, maintained at a temperature above 50 °C during carriage. In this case the degree of filling at the outset shall be such, and the temperature so regulated, that the tank is not full to more than 95 % of its capacity and that the filling temperature is not exceeded during carriage.

4.3.2.2.4	(Reserved)	Where tank-containers intended for the carriage of liquids [1] are not divided by partitions or surge plates into sections of not more than 7 500 litres capacity, they shall be filled to not less than 80 % or not more than 20 % of their capacity.

4.3.2.3. Operation

4.3.2.3.1. The thickness of the walls of the shell shall not, throughout its use, fall below the minimum figure prescribed in

6.8.2.1.17 and 6.8.2.1.18	6.8.2.1.17 to 6.8.1.20

(1) Under this requirement, substances whose kinematic viscosity at 20 °C is below 2 680 mm²/s shall be deemed to be liquids.

4.3.2.3.2. (Reserved)

During carriage tank-containers/MEGCs shall be loaded on the wagon in such a way as to be adequately protected by the fittings of the wagon or of the tank-container/MEGC itself against lateral and longitudinal impact and against overturning [1]. If the tank-containers/MEGCs, including the service equipment, are so constructed as to withstand impact or overturning they need not be protected in this way.

4.3.2.3.3. During filling and discharge of tanks, battery-wagons and MEGCs, appropriate measures shall be taken to prevent the release of dangerous quantities of gases and vapours. Tanks, battery-wagons and MEGCs shall be closed so that the contents cannot spill out uncontrolled. The openings of bottom-discharge tanks shall be closed by means of screwthreaded plugs, blank flanges or other equally effective devices. The leakproofness of the closures of the tanks, and of the battery-wagons and MEGCs shall be checked by the filler after the tank is filled. This applies in particular to the upper part of the dip tube.

4.3.2.3.4. Where several closure systems are fitted in series, that nearest to the substance being carried shall be closed first.

4.3.2.3.5. No dangerous residue of the filling substance shall adhere to the outside of the tank during carriage.

4.3.2.3.6. Substances which may react dangerously with each other shall not be carried in adjoining compartments of tanks.

Substances which may react dangerously with each other may be carried in adjoining compartments of tanks, when these compartments are separated by a partition with a wall thickness equal to or greater than that of the tank itself. They may also be carried separated by an empty space or an empty compartment between loaded compartments.

4.3.2.4. Empty tanks, battery-wagons and MEGCs, uncleaned

NOTE. For empty tanks, battery-wagons and MEGCs, uncleaned, special provisions TU1, TU2, TU4, TU16 and TU35 of section 4.3.5 may apply.

4.3.2.4.1 No dangerous residue of the filling substance shall adhere to the outside of the tank during carriage.

4.3.2.4.2 Empty tanks, battery-wagons and MEGCs, uncleaned, shall be closed in the same manner and be leakproof to the same degree as if they were full.

4.3.2.4.3 Where empty tanks, battery-wagons and MEGCs, uncleaned, are not closed in the same manner and are not leakproof to the same degree as if they were full and where the requirements of RID cannot be complied with, they shall be carried, with due regard to adequate safety, to the nearest suitable place where cleaning or repair can be carried out.

Carriage is adequately safe if suitable measures have been taken to ensure equivalent safety commensurate with the requirements of this Directive and to prevent the uncontrolled release of the dangerous goods.

4.3.2.4.4 Empty fixed tank-wagons, demountable tanks, battery-wagons, tank-containers, tank swap bodies and MEGCs, uncleaned, may also be carried after the expiry of the periods established in 6.8.2.4.2 and 6.8.2.4.3 for undergoing the inspection.

4.3.3. *Special requirements applicable to Class 2*

4.3.3.1. Coding and hierarchy of tanks

4.3.3.1.1. Coding of tanks, battery-wagons and MEGCs

The four parts of the codes (tank codes) given in column (12) of Table A in Chapter 3.2 have the following meanings:

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[1] Examples of protection of shells:
— protection against lateral impact may, for example, consist of longitudinal bars protecting the shell on both sides at the level of the median line;
— protection against overturning may, for example, consist of reinforcing rings or bars fixed transversally in relation to the frame;
— protection against rear impact, may, for example, consist of a bumper or frame.

Part	Description	Code
1	Types of tank, battery-wagon or MEGC	C = tank, battery-wagon or MEGC for compressed gases P = tank, battery-wagon or MEGC for liquefied gases or gases dissolved under pressure R = tank for refrigerated liquefied gases
2	Calculation pressure	X = value of the relevant minimum test pressure in bar according to the table in 4.3.3.2.5 or 22 = minimum calculation pressure in bar
3	Openings (see 6.8.2.2 and 6.8.3.2)	B = tank with bottom filling or discharge openings with 3 closures or battery-wagon or MEGC with openings below the surface of the liquid or for compressed gases C = tank with top filling or discharge openings with 3 closures with only cleaning openings below the surface of the liquid D = tank with top filling or discharge openings with 3 closures, or battery-wagon or MEGC with no openings below the surface of the liquid
4	Safety valves/devices	N = tank, battery-wagon or MEGC with safety valve according to 6.8.3.2.9 or 6.8.3.2.10 which is not hermetically closed H = hermetically closed tank, battery-wagon or MEGC (see 1.2.1)

NOTE 1. The special provision TU17 indicated in column (13) of Table A in Chapter 3.2 for certain gases means that the gas may only be carried in a battery-wagon or MEGC.

NOTE 2. The pressures indicated on the tank itself or on the panel shall be not less than the value of 'X' or the minimum calculation pressure.

4.3.3.1.2. Hierarchy of tanks

Tank code	Other tank codes permitted for the substances under this code
C*BN	C#BN, C#CN, C#DN, C#BH, C#CH, C#DH
C*BH	C#BH, C#CH, C#DH
C*CN	C#CN, C#DN, C#CH, C#DH
C*CH	C#CH, C#DH
C*DN	C#DN, C#DH
C*DH	C#DH
P*BN	P#BN, P#CN, P#DN, P#BH, P#CH, P#DH
P*BH	P#BH, P#CH, P#DH
P*CN	P#CN, P#DN, P#CH, P#DH
P*CH	P#CH, P#DH
P*DN	P#DN, P#DH
P*DH	P#DH
R*BN	R#BN, R#CN, R#DN
R*CN	R#CN, R#DN
R*DN	R#DN

The figure represented by # shall be equal to or greater than the figure represented by *.

NOTE. *This hierarchy does not take any special provisions into account (see 4.3.5 and 6.8.4) for each entry.*

4.3.3.2. Filling conditions and test pressures

4.3.3.2.1. The test pressure for tanks intended for the carriage of compressed gases having a critical temperature below −50 °C shall be at least one and one half times the filling pressure at 15 °C.

4.3.3.2.2. The test pressure for tanks intended for the carriage of:

— compressed gases having a critical temperature of −50 °C or above;

— liquefied gases having a critical temperature below 70 °C; and

— gases dissolved under pressure

shall be such that, when the shell is filled to the maximum mass of the contents per litre of capacity, the pressure reached in the shell by the substance at 55 °C for tanks with thermal insulation or 65 °C for tanks without thermal insulation does not exceed the test pressure.

4.3.3.2.3. The test pressure for tanks intended for the carriage of liquefied gases having a critical temperature of 70 °C or above shall be:

(a) If the tank is equipped with thermal insulation, at least equal to the vapour pressure, reduced by 0,1 MPa (1 bar) of the liquid at 60 °C, but not less than 1 MPa (10 bar);

(b) If the tank is not equipped with thermal insulation, at least equal to the vapour pressure, reduced by 0,1 MPa (1 bar), of the liquid at 65 °C, but not less than 1 MPa (10 bar).

The maximum permissible mass of contents per litre of capacity in kg/l for the degree of filling is calculated as follows:

Maximum permissible mass of contents per litre of capacity = 0,95 x density of the liquid phase at 50 °C (in kg/l); moreover the vapour phase shall not disappear below 60 °C.

If the shells are not more than 1,5 m in diameter the values of the test pressure and maximum permissible mass of contents per litre of capacity conforming to Packing Instruction P200 in 4.1.4.1 shall be applicable.

4.3.3.2.4. The test pressure for tanks intended for the carriage of liquefied refrigerated gases shall be not less than 1,3 times the maximum permitted working pressure indicated on the tank but not less than 300 kPa (3 bar) (gauge pressure); for tanks with vacuum insulation the test pressure shall be not less than 1,3 times the maximum permitted working pressure increased by 100 kPa (1 bar).

4.3.3.2.5. Table of gases and gas mixtures which may be carried in tank wagons, battery-wagons, demountable tanks, tank-containers and MEGCs indicating the minimum test pressure for tanks and as far as applicable, maximum permissible mass of contents per litre of capacity

In the case of gases and gas mixtures classified under n.o.s. entries, the values of the test pressure and maximum permissible mass of contents per litre of capacity shall be prescribed by the expert approved by the competent authority.

When shells for compressed or liquefied gases having a critical temperature of −50 °C or above and below 70 °C have been subjected to a test pressure lower than shown in the table, and the tanks are fitted with thermal insulation, a lower maximum load may be prescribed by the expert approved by the competent authority, provided that the pressure reached in the tank by the substance at 55 °C does not exceed the test pressure stamped on the tank.

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1001	Acetylene, dissolved	4 F	only in battery wagons and MEGCs composed of receptacles				
1002	Air, compressed	1 A	see 4.3.3.2.1				
1003	Air, refrigerated liquid	3 O	see 4.3.3.2.4				
1005	Ammonia, anhydrous	2 TC	2,6	26	2,9	29	0,53
1006	Argon, compressed	1 A	see 4.3.3.2.1				
1008	Boron trifluoride, compressed	1 TC	22,5	225	22.5	225	0.715
			30	300	30	300	0,86
1009	Bromotrifluoromethane (Refrigerant gas R13B1)	2 A	12	120			1,50
					4,2	42	1,13
					12	120	1,44
					25	250	1,60
1010	1,3-butadiene, inhibited or 1,2-butadiene, inhibited or mixtures of 1,3-butadiene hydrocarbons, inhibited	2 F	1	10	1	10	0,55
			1	10	1	10	0,59
			1	10	1	10	0,50
1011	Butane	2 F	1	10	1	10	0,51
1012	1-butylene or trans-2-butylene or cis-2-butylene or butylenes mixture	2 F	1	10	1	10	0,53
			1	10	1	10	0,54
			1	10	1	10	0,55
			1	10	1	10	0,50
1013	Carbon dioxide	2 A	19	190			0,73
			22,5	225			0,78
					19	190	0,66
					25	250	0,75
1014	Carbon dioxide and oxygen mixtures compressed	1 O	see 4.3.3.2.1				
1015	Carbon dioxide and nitrous oxide mixture	2 A	see 4.3.3.2.2 of 4.3.3.2.3				
1016	Carbon monoxide, compressed	1 TF	see 4.3.3.2.1				
1017	Chlorine	2 TC	1,7	17	1,9	19	1,25
1018	Chlorodifluoromethane (Refrigerant gas R22)	2 A	2,4	24	2,6	26	1,03
1020	Chloropentafluoroethane (Refrigerant gas R115)	2 A	2	20	2,3	23	1,08
1021	1-chloro-1,2,2,2-tetrafluoroethane (Refrigerant gas R124)	2 A	1	10	1,1	11	1,2
1022	Chlorotrifluoromethane (Refrigerant gas R13)	2 A	12	120			0,96
			22,5	225			1,12
					10	100	0,83
					12	120	0,90
					19	190	1,04
					25	250	1,10

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1023	Coal gas, compressed	1 TF	see 4.3.3.2.1				
1026	Cyanogen	2 TF	10	100	10	100	0,70
1027	Cyclopropane	2 F	1,6	16	1,8	18	0,53
1028	Dichlorofluoromethane (Refrigerant gas R12)	2 A	1,5	15	1,6	16	1,15
1029	Dichlorofluoromethane (Refrigerant gas R21)	2 A	1	10	1	10	1,23
1030	1,1-difluoroethane (Refrigerant gas R152a)	2 F	1,4	14	1,6	16	0,79
1032	Dimethylamine, anhydrous	2 F	1	10	1	10	0,59
1033	Dimethyl ether	2 F	1,4	14	1,6	16	0,58
1035	Ethane	2 F	12	120			0,32
					9,5	95	0,25
					12	120	0,29
					30	300	0,39
1036	Ethylamine	2 F	1	10	1	10	0,61
1037	Ethyl chloride	2 F	1	10	1	10	0,8
1038	Ethylene, refrigerated liquid	3 F	see 4.3.3.2.4				
1039	Ethyl methyl ether	2 F	1	10	1	10	0,64
1040	Ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 °C	2 TF	1,5	15	1,5	15	0,78
1041	Ethylene oxide and carbon dioxide mixture, with more than 9 % ethylene oxide but not more than 87 %	2 F	2,4	24	2,6	26	0,73
1046	Helium, compressed	1 A	see 4.3.3.2.1				
1048	Hydrogen bromide, anhydrous	2 TC	5	50	5,5	55	1,54
1049	Hydrogen, compressed	1 F	see 4.3.3.2.1				
1050	Hydrogen chloride, anhydrous	2 TC	12	120			0,69
					10	100	0,30
					12	120	0,56
					15	150	0,67
					20	200	0,74
1053	Hydrogen sulphide	2 TF	4.5	45	5	50	0,67
1055	Isobutylene	2 F	1	10	1	10	0,52
1056	Krypton, compressed	1 A	see 4.3.3.2.1				
1058	Liquefied gases, non flammable, charged with nitrogen, carbon dioxide or air	2 A	1,5 × filling pressure see 4.3.3.2.2 of 4.3.3.2.3				

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1060	Methylacetylene and propadiene mixture, stabilized:	2 F	see 4.3.3.2.2 of 4.3.3.2.3				
	mixture P1		2,5	25	2,8	28	0,49
	mixture P2		2,2	22	2,3	23	0,47
	propadiene with 1 % to 4 % methylacetylene		2,2	22	2,2	22	0,50
1061	Methylamine, anhydrous	2 F	1	10	1,1	11	0,58
1062	Methyl bromide	2 T	1	10	1	10	1,51
1063	Methylchloride (Refrigerant gas R40)	2 F	1,3	13	1,5	15	0,81
1064	Methyl mercaptan	2 TF	1	10	1	10	0,78
1065	Neon, compressed	1 A	see 4.3.3.2.1				
1066	Nitrogen, compressed	1 A	see 4.3.3.2.1				
1067	Dinitrogentetroxide (nitrogen dioxide)	2 TOC	only in battery-wagons and MEGCs composed of receptacles				
1070	Nitrous oxide	2 O	22,5	225			0,78
					18	180	0,68
					22,5	225	0,74
					25	250	0,75
1071	Oil gas, compressed	1 TF	see 4.3.3.2.1				
1072	Oxygen, compressed	1 O	see 4.3.3.2.1				
1073	Oxygen, refrigerated liquid	3 O	see 4.3.3.2.4				
1076	Phosgene	2 TC	only in battery-wagons and MEGCs composed of receptacles				
1077	Propylene	2 F	2,5	25	2,7	27	0,43
1078	Refrigerant gases, n.o.s. such as:	2 A					
	mixture F1		1	10	1,1	11	1,23
	mixture F2		1,5	15	1,6	16	1,15
	mixture F3		2,4	24	2,7	27	1,03
	other mixtures		see 4.3.3.2.2 of 4.3.3.2.3				
1079	Sulphur dioxide	2 TC	1	10	1,2	12	1,23
1080	Sulphur hexafluoride	2 A	12	120			1,34
					7	70	1,04
					14	140	1,33
					16	160	1,37
1082	Trifluorochloroethylene, stabilized	2 TF	1,5	15	1,7	17	1,13
1083	Trimethylamine, anhydrous	2 F	1,5	15	1,7	17	1,13
1085	Vinyl bromide, stabilized	2 F	1	10	1	10	1,37
1086	Vinyl chloride, stabilized	2 F	1	10	1,1	11	0,81
1087	Vinyl methyl ether, stabilized	2 F	1	10	1	10	0,67

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1581	Chloropicrin and methyl bromide mixture	2T	1	10	1	10	1,51
1582	Chloropicrin and methyl chloride mixture	2T	1,3	13	1,5	15	0,81
1612	Hexaethyltetraphosphate and compressed gas mixture	1 T	see 4.3.3.2.1				
1749	Chlorine trifluoride	2 TOC	3	30	3	30	1,40
1858	Hexafluoropropylene (Refrigerant gas R1216)	2A	1,7	17	1,9	19	1,11
1859	Silicon tetrafluoride, compressed	1 TC	20	200	20	200	0,74
			30	300	30	300	1,10
1860	Vinyl fluoride, stabilized	2 F	12	120			0,58
			22,5	225			0,65
					25	250	0,64
1912	Methyl chloride and methylene chloride mixture	2 F	1,3	13	1,5	15	0,81
1913	Neon, refrigerated liquid	3 A	see 4.3.3.2.4				
1951	Argon, refrigerated liquid	3 A	see 4.3.3.2.4				
1952	Ethylene oxide and carbon dioxide mixture, with not more than 9 % ethylene oxide	2 A	19	190	19	190	0,66
			25	250	25	250	0,75
1953	Compressed gas, toxic, flammable, n.o.s. ([a])	1 TF	see 4.3.3.2.1 or 4.3.3.2.2				
1954	Compressed gas, flammable, n.o.s.	1 F	see 4.3.3.2.1 or 4.3.3.2.2				
1955	Compressed gas, toxic, n.o.s. ([a])	1 T	see 4.3.3.2.1 or 4.3.3.2.2				
1956	Compressed gas, n.o.s.	1 A	see 4.3.3.2.1 or 4.3.3.2.2				
1957	Deuterium, compressed	1 F	see 4.3.3.2.1				
1958	1,2-dichloro-1,1,2,2 tetrafluoroethane (Refrigerant gas R114)	2 A	1	10	1	10	1,3
1959	1,1-difluoroethylene (Refrigerant gas R1132a)	2 F	12	120			0,66
			22,5	225			0,78
					25	250	0,77
1961	Ethane, refrigerated liquid	3 F	see 4.3.3.2.4				
1962	Ethylene, compressed	1 F	12	120			0,25
			22,5	225			0,36
					22,5	225	0,34
					30	300	0,37
1963	Helium, refrigerated liquid	3 A	see 4.3.3.2.4				
1964	Hydrocarbon gas mixture, compressed, n.o.s.	1 F	see 4.3.3.2.1 or 4.3.3.2.2				

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	2 F					
	Mixture A		1	10	1	10	0,50
	Mixture A01		1,2	12	1,4	14	0,49
	Mixture A02		1,2	12	1,4	14	0,48
	Mixture A0		1,2	12	1,4	14	0,47
	Mixture A1		1,6	16	1,8	18	0,46
	Mixture B1		2	20	2,3	23	0,45
	Mixture B2		2	20	2,3	23	0,44
	Mixture B		2	20	2,3	23	0,43
	Mixture C		2,5	25	2,7	27	0,42
	Other mixtures		see 4.3.3.2.2 of 4.3.3.2.3				
1966	Hydrogen, refrigerated liquid	3 F	see 4.3.3.2.4				
1967	Insecticide gas, toxic, n.o.s.. ([a])	2 T	see 4.3.3.2.2 of 4.3.3.2.3				
1968	Insecticide gas, n.o.s.	2 A	see 4.3.3.2.2 of 4.3.3.2.3				
1969	Isobutane	2 F	1	10	1	10	0,49
1970	Krypton, refrigerated liquid	3 A	see 4.3.3.2.4				
1971	Methane, compressed or natural gas, compressed with high methane content	1 F	see 4.3.3.2.1				
1972	Methane, refrigerated liquid or natural gas, refrigerated liquid with high methane content	3 F	see 4.3.3.2.4				
1973	Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49 % chlorodifluoromethane (Refrigerant gas R502)	2 A	2,5	25	2,8	28	1,05
1974	Chlorodifluorobromomethane (Refrigerant gas R12B1)	2 A	1	10	1	10	1,61
1976	Octafluorocyclobutane (Refrigerant gas RC318)	2 A	1	10	1	10	1,34
1977	Nitrogen, refrigerated liquid	3 A	see 4.3.3.2.4				
1978	Propane	2 F	2,1	21	2,3	23	0,42
1979	Rare gases mixture, compressed	1 A	see 4.3.3.2.1				
1980	Rare gases and oxygen mixture, compressed	1 A	see 4.3.3.2.1				
1981	Rare gases and nitrogen mixture, compressed	1 A	see 4.3.3.2.1				
1982	Tetrafluoromethane (Refrigerant gas R14) compressed	1 A	20	200	20	200	0,62
			30	300	30	300	0,94
1983	1-chloro-2,2,2-trifluoroethane (Refrigerant gas R133a)	2 A	1	10	1	10	1,18

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
1984	Trifluoromethane (Refrigerant gas R23)	2 A	19	190			0,92
			25	250			0,99
					19	190	0,87
					25	250	0,95
2034	Hydrogen and methane mixture, compressed	1 F	see 4.3.3.2.1				
2035	1,1,1-trifluoroethane (Refrigerant gas R143a)	2 F	2,8	28	3,2	32	0,79
2036	Xenon, compressed	1 A	12	120			1,30
					13	130	1,24
2044	2,2-dimethylpropane	2 F	1	10	1	10	0,53
2073	Ammonia solutions, relative density less than 0,880 at 15 °C in water ammonia	4 A					
	with more than 35 % but not more than 40 %		1	10	1	10	0,80
	with more than 40 % but not more than 50 % ammonia		1,2	12	1,2	12	0,77
2187	Carbon dioxide, refrigerated liquid	3 A	see 4.3.3.2.4				
2189	Dichlorosilane	2 TFC	1	10	1	10	0,90
2191	Sulphuryl fluoride	2 T	5	50	5	50	1,1
2193	Hexafluoroethane (Refrigerant gas R116), compressed	1 A	16	160			1,28
			20	200			1,34
					20	200	1,10
2197	Hydrogen iodide, anhydrous	2 TC	1,9	19	2,1	21	2,25
2200	Propadiene, stabilized	2 F	1,8	18	2,0	20	0,50
2201	Nitrous oxide, refrigerated liquid	3 O	see 4.3.3.2.4				
2203	Silane, compressed ([b])	1 F	22,5	225	22,5	225	0,32
			25	250	25	250	0,41
2204	Carbonyl sulphide,	2 TF	2,7	27	3,0	30	0,84
2417	Carbonyl fluoride, compressed	1 TC	20	200	20	200	0,47
			30	300	30	300	0,70
2419	Bromotrifluoroethylene	2 F	1	10	1	10	1,19
2420	Hexafluoroacetone	2 TC	1,6	16	1,8	18	1,08
2422	Octafluorobut-2-ene (Refrigerant gas R1318)	2 A	1	10	1	10	1,34
2424	Octafluoropropane (Refrigerant gas R218)	2 A	2,1	21	2,3	23	1,07
2451	Nitrogen trifluoride, compressed	1 O	20	200	20	200	0,50
			30	300	30	300	0,75
2452	Ethylacetylene, stabilized	2 F	1	10	1	10	0,57
2453	Ethyl fluoride (Refrigerant gas R161)	2 F	2,1	21	2,5	25	0,57
2454	Methyl fluoride (Refrigerant gas R41)	2 F	30	300	30	300	0,36

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
2517	1-chloro-1,1-difluoroethane (Refrigerant gas R142b)	2 F	1	10	1	10	0,99
2591	Xenon, refrigerated liquid	3 A	see 4.3.3.2.4				
2599	Chlorotrifluoromethane and trifluoromethane, azeotropic mixture with approximately 60 % chlorotrifluoromethane (Refrigerant gas R503)	2 A	3,1	31	3,1	31	0,11
			4,2	42			0,21
			10	100			0,76
					4,2	42	0,20
					10	100	0,66
2600	Carbon monoxide and hydrogen mixture, compressed	1 TF	see 4.3.3.2.1				
2601	Cyclobutane	2 F	1	10	1	10	0,63
2602	Dichlorodifluoromethane and difluoroethane, azeotropic mixture with approximately 74 % dichlorodifluoromethane (Refrigerant gas R500)	2 A	1,8	18	2	20	1,01
2901	Bromine chloride	2 TOC	1	10	1	10	1,50
3057	Trifluoroacetyl chloride	2 TC	1,3	13	1,5	15	1,17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12,5 % ethylene oxide	2 A	1,5	15	1,6	16	1,09
3083	Perchloryl fluoride	2 TO	2,7	27	3,0	30	1,21
3136	Trifluoromethane, refrigerated liquid	3 A	see 4.3.3.2.4				
3138	Ethylene, acetylene and propylene mixture, refrigerated liquid, containing at least 71,5 % ethylene with not more than 22,5 % acetylene and not more than 6 % propylene	3 F	see 4.3.3.2.4				
3153	Perfluoro (methyl vinyl ether)	2 F	1,4	14	1,5	15	1,14
3154	Perfluoro (ethyl vinyl ether)	2 F	1	10	1	10	0,98
3156	Compressed gas, oxidizing, n.o.s.	1 O	see 4.3.3.2.1 or 4.3.3.2.2				
3157	Liquefied gas, oxidizing, n.o.s.	2 O	see 4.3.3.2.2 or 4.3.3.2.3				
3158	Gas, refrigerated liquid, n.o.s.	3 A	see 4.3.3.2.4				
3159	1,1,1,2-tetrafluoroethane (Refrigerant gas R134a)	2 A	1,6	16	1,8	18	1,04
3160	Liquefied gas, toxic, flammable, n.o.s. [a]	2 TF	see 4.3.3.2.2 or 4.3.3.2.3				
3161	Liquefied gas, flammable, n.o.s.	2 F	see 4.3.3.2.2 or 4.3.3.2.3				
3162	Liquefied gas, toxic, n.o.s. [a]	2 T	see 4.3.3.2.2 or 4.3.3.2.3				
3163	Liquefied gas, n.o.s.	2 A	see 4.3.3.2.2 or 4.3.3.2.3				
3220	Pentafluoroethane (Refrigerant gas R125)	2 A	4,1	41	4,9	49	0,95
3252	Difluoromethane (Refrigerant gas R32)	2 F	3,9	39	4,3	43	0,78
3296	Heptafluoropropane (Refrigerant gas R227)	2 A	1,4	14	1,6	16	1,20

UN-No.	Name	Classification-code	Minimum test pressure for tanks				Maximum permissible mass of contents per litre of capacity
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	kg
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8,8 % ethylene oxide	2 A	1	10	1	10	1,16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7,9 % ethylene oxide	2 A	2,4	24	2,6	26	1,02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5,6 % ethylene oxide	2 A	1,5	15	1,7	17	1,03
3300	Ethylene oxide and carbon dioxide mixture, with more than 87 % ethylene oxide	2 TF	2,8	28	2,8	28	0,73
3303	Compressed gas, toxic, oxidizing, n.o.s. ([a])	1 TO	see 4.3.3.2.1 or 4.3.3.2.2				
3304	Compressed gas, toxic, corrosive, n.o.s. ([a])	1 TC	see 4.3.3.2.1 or 4.3.3.2.2				
3305	Compressed gas, toxic, flammable, corrosive, n.o.s. ([a])	1 TFC	see 4.3.3.2.1 or 4.3.3.2.2				
3306	Compressed gas, toxic, oxidizing, corrosive, n.o.s. ([b])	1 TOC	see 4.3.3.2.1 or 4.3.3.2.2				
3307	Liquefied gas, toxic, oxidizing, n.o.s. ([a])	2 TO	see 4.3.3.2.2 or 4.3.3.2.3				
3308	Liquefied gas, toxic, corrosive, n.o.s. ([a])	2 TC	see 4.3.3.2.2 or 4.3.3.2.3				
3309	Liquefied gas, toxic, flammable, corrosive, n.o.s. ([a])	2 TFC	see 4.3.3.2.2 or 4.3.3.2.3				
3310	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. ([a])	2 TOC	see 4.3.3.2.2 of 4.3.3.2.3				
3311	Gas, refrigerated, liquefied, oxidizing, n.o.s.	3 O	see 4.3.3.2.4				
3312	Gas, refrigerated, liquefied, flammable, n.o.s.	3 F	see 4.3.3.2.4				
3318	Ammonia solutions, relative density less than 0,880 kg/l at 15 °C in water, with more than 50 % ammonia	4 TC	see 4.3.3.2.2				
3337	Refrigerant gas	2 A	2,8	28	3,2	32	0,84
3338	Refrigerant gas	2 A	2,8	28	3,2	32	0,95
3339	Refrigerant gas	2 A	3,0	30	3,3	33	0,95
3340	Refrigerant gas	2 A	2,7	27	3,0	30	0,95
3354	Insecticide gas, flammable, n.o.s.	2 F	see 4.3.3.2.2 or 4.3.3.2.3				
3355	Insecticide gas, toxic, flammable, n.o.s. ([a])	2 TF	see 4.3.3.2.2 or 4.3.3.2.3				

([a]) Allowed if LC_{50} equal to or greater than 200 ppm.
([b]) Considered as self-reactive (pyrophoric).

4.3.3.3. Operation

4.3.3.3.1 When tanks, battery wagons or MEGCs are approved for different gases, the change of use shall include emptying, purging and evacuation operations to the extent necessary for safe operation.

4.3.3.3.2 When tanks, battery wagons or MEGCs are handed over for carriage, only the particulars specified in 6.8.3.5.6 applicable to the gas loaded or just discharged shall be visible; all particulars concerning other gases shall be covered up (see leaflet UIC 573 OR).

4.3.3.3.3 All the elements of a battery wagon or MEGC shall contain only one and the same gas.

4.3.3.4. Provisions for the loading of liquid gas tank wagons	(Reserved)
4.3.3.4.1. Control measures before loading (a) For each gas to be carried, the details on the tank plate (see 6.8.2.5.1 and 6.8.3.5.1 to 6.8.3.5.5) shall be checked to agree with those on the wagon panel (see 6.8.2.5.2, 6.8.3.5.6 and 6.8.3.5.7). Tank wagons for multiple use shall especially be checked to ensure that the correct folding panels are visible on both sides of the wagon. The load limits on the wagon panel shall not exceed the maximum permissible filling mass on the tank plate. (b) The last load shall be determined, either from particulars in the consignment note or by analysis. If necessary, the tank shall be cleaned. (c) The mass of the residue shall be determined (e.g. by weighing) and taken into account in determining the filling quantity. (d) The leakproofness of the shell and its items of equipment, and their ability to function, shall be checked.	(Reserved)
4.3.3.4.2. Loading procedure For loading, the provisions of the operating instructions of the tank wagon shall be complied with.	(Reserved)
4.3.3.4.3. Control measures after loading (a) After filling, whether the wagon is overfilled or overloaded shall be checked by calibrated checking devices (e.g. by weighing on a calibrated weighbridge). Overfilled or overloaded tank wagons shall be immediately discharged in a safe manner until the permitted filling quantity is reached. (b) The partial pressure of inert gases in the gas phase shall not exceed 0,2 MPa (2 bar), or the gauge pressure in the gas phase shall not exceed by more than 0,1 MPa (1 bar) the vapour pressure (absolute) of the liquid gas at the temperature of the liquid phase. (c) After loading, bottom-discharge wagons shall be checked to ensure that the internal shut-off devices are adequately closed.	(Reserved)

(d) Before blank flanges or other equally effective devices are fitted, the vents shall be checked for leakproofness; any leaks shall be stopped by suitable means.

(e) Blank flanges or other equally effective devices shall be fitted on vents. These closures shall be equipped with suitable seals. They shall be closed when using all elements provided for in their design types.

(f) Lastly, a final visual check of the wagon, its equipment and marking shall be made to ensure that no filling substance is escaping.

(Reserved)

4.3.4. *Provisions applicable to Classes 3 to 9*

4.3.4.1. Coding, rationalized approach and hierarchy of tanks

4.3.4.1.1. Coding of tanks

The four parts of the codes (tank codes) given in column (12) of Table A in Chapter 3.2 have the following meanings:

Part	Description	Code
1	Types of tank,	L = tank for substances in the liquid state (liquids or solids handed over for carriage in the molten state) S = tank for substances in the solid state (powdery or granular)
2	Calculation pressure	G = minimum calculation pressure according to the general requirements of 6.8.2.1.14 1.5; 2.65; 4; 10; 15 or 21 = minimum calculation pressure in bar (see 6.8.2.1.14)
3	Openings (see 6.8.2.2.2)	A = tank with bottom-filling and discharge openings with 2 closures B = tank with bottom-filling and discharge openings with 3 closures C = tank with top-filling and discharge openings with only cleaning openings below the surface of the liquid D = tank with top-filling and discharge openings with no openings below the surface of the liquid
4	Safety valves/devices	V = tank with a venting system according to 6.8.2.2.6 but no flame trap; or non-explosion-pressure proof tank F = tank with a venting system according to 6.8.2.2.6; fitted with a flame trap or explosion-pressure proof tank N = tank with a safety valve according to 6.8.2.2.7 or 6.8.2.2.8 and not hermetically closed; these tanks may be fitted with vacuum valves or controlled ventilation (auto-vent) valves H = hermetically closed tank (see definition in 1.2.1)

4.3.4.1.2. Rationalized approach for assignment of tank codes to groups of substances and hierarchy of tanks.

NOTE. Certain substances and groups of substances are not included in the rationalized approach (see 4.3.4.1.3)

Rationalized approach				Hierarchy of tanks
Tank code	Group of permitted substances			Other tank codes permitted for substances under this code
	Class	Classification code	Packing group	
LIQUIDS				
LGAV	3 9	F2 M9	III III	LGAH; LGBV; LGBF; LGBH; L1,5AH; L1,5BN; L1,5BH; L4BN; L4BH; L4DH; L10BH; L10CH; L10DH; L15CH; L21DH
LGBV	4.1 5.1 9 9	F2 O1 M6 M11	II, III III III III	LGBF; LGBH; L1,5BN; L1,5BH; L4BV; L4BN; L4BH; L4DH; L10BH; L10CH; L10DH; L15CH; L21DH
	and groups of permitted substances for tank code LGAV			
LGBF	3 3	F1 F1	II vapour pressure at 50 °C ≤ 1,1 bar III	LGBH; L1,5BN; L1,5BH; L4BN; L4BH; L4DH; L10BH; L10CH; L10DH; L15CH; L21DH
	and groups of permitted substances for tank code LGAV and LGBV			
L1,5BN	3	F1	I, II 1,1 bar > vapour pressure at 50 °C ≤ 1,75 bar	L1,5BH; L4BN; L4BH; L4DH; L10BH; L10CH;L10DH;L15CH; L21DH.
	and groups of permitted substances for tank code LGAV, LGBV en LGBF			
L4BV	5.1	O1	—	—
L4BN	3 3 5.1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9	F1 FC O1 C1 C3 C4 C5 C7 C8 C9 C10 CF1 CF2 CS1 CS2 CW1 CW2 CO1 CO2 CT1 CT2 CFT M11	I, III vapour pressure at 50 °C > 1,75 bar III I, II II, III II, III II, III II, III II, III II, III II, III II, III II II II II II II II II II, III II, III II III	L4BH; L4DH; L10BH; L10CH; L10DH; L15CH;L21DH.
	and groups of permitted substances for tank code LGAV, LGBV, LGBF en L1,5BN			

Rationalized approach				Hierarchy of tanks
Tank code	Group of permitted substances			Other tank codes permitted for substances under this code
	Class	Classification code	Packing group	
L4BH	3 3 3 3 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.2 9 and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN and L4BN	FT1 FT2 FC FTC T1 T2 T3 T4 T5 T7 TF1 TF2 TF3 TS TW1 TO1 TC1 TC2 TC3 TFC Risk group 2 M2	II, III II II II II, III II, III II, III II, III II, III II, III II II, III II II II II II II II II II II	L4DH; L10BH; L10CH; L10DH; L15CH; L21DH.
L4DH	4.2 4.2 4.2 4.2 4.2 4.2 4.3 4.3 4.3 4.3 8 and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN and L4BH	S1 S3 ST1 ST3 SC1 SC3 W1 WF1 WT1 WC1 CT1	II, III II, III II, III II, III II, III II, III II, III II, III II, III II, III II, III	L10DH; L21DH
L10BH	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN and L4BH	C1 C3 C4 C5 C7 C8 C9 C10 CF1 CF2 CS1 CW1 CO1 CO2 CT1 CT2 COT	I I I I I I I I I I I I I I I I I	L10CH; L10DH; L15CH en L21DH

Rationalized approach				Hierarchy of tanks
Tank code	Group of permitted substances			Other tank codes permitted for substances under this code
	Class	Classification code	Packing group	
L10CH	3 3 3 3 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	FT1 FT2 FC FTC T1 T2 T3 T4 T5 T6 T7 TF1 TF2 TF3 TS TW1 TO1 TC1 TC2 TC3 TC4 TFC	I I I I I I I I I I I I I I I I I I I I I I	L10DH; L15CH; L21DH
	and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN, L4BH and L10BH			
L10DH	4.3 4.3 4.3 4.3 4.3 5.1 8	W1 WF1 WT1 WC1 WFC OTC CT1	I I I I I I I	L21DH
	and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN, L4BH, L4DH, L10BH and L10CH			
L15CH	3 6.1	FT1 TF1	I I	L21DH
	and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN, L4BH, L10BH, and L10CH			
L21DH	4.2 4.2 4.2 4.2	S1 S3 SW ST3	I I I I	
	and groups of permitted substances for tank code LGAV, LGBV, LGBF, L1,5BN, L4BN, L4BH, L4DH, L10BH, L10CH, L10DH and L15CH			
SOLIDS				
SGAV	4.1 4.1 4.2 5.1 8 8 8 8 8 8 9 9	F1 F3 S2 O2 C2 C4 C6 C8 C10 CT2 M7 M11	III III III II, III II, III III III III II, III III III II, III	SGAN; SGAH; S4AH; S10AN; S10AH.

Rationalized approach				Hierarchy of tanks
Tank code	Group of permitted substances			Other tank codes permitted for substances under this code
	Class	Classification code	Packing group	
SGAN	4.1	F1	II	SGAN; SGAH; S4AH; S10AN; S10AH.
	4.1	F3	II	
	4.1	FT1	II, III	
	4.1	FT2	II, III	
	4.1	FC1	II, III	
	4.1	FC2	II, III	
	4.2	S2	II	
	4.2	S4	II, III	
	4.2	ST2	II, III	
	4.2	ST4	II, III	
	4.2	SC2	II, III	
	4.2	SC4	II, III	
	4.3	W2	II, III	
	4.3	WS	II, III	
	4.3	WT2	II, III	
	4.3	WC2	II, III	
	5.1	O2	II, III	
	5.1	OT2	II, III	
	5.1	OC2	II, III	
	8	C2	II	
	8	C4	II	
	8	C6	II	
	8	C8	II	
	8	C10	II	
	8	CF2	II	
	8	CS2	II	
	8	CW2	II	
	8	CO2	II	
	8	CT2	II	
	9	M3	III	
	and groups of permitted substances for tank code SGAV			
SGAH	6.1	T2	II, III	S4AH; S10AH
	6.1	T3	II, III	
	6.1	T5	II, III	
	6.1	T7	II, III	
	6.1	T9	II	
	6.1	TF3	II	
	6.1	TS	II	
	6.1	TW2	II	
	6.1	TO2	II	
	6.1	TC2	II	
	6.1	TC4	II	
	9	M1	II, III	
	and groups of permitted substances for tank code SGAV and SGAN			
S4AH	9	M2	II	S10AH
	and groups of permitted substances for tank code SGAV, SGAN and SGAH			
S10AN	8	C2	I	S10AH
	8	C4	I	
	8	C6	I	
	8	C8	I	
	8	C10	I	
	8	CF2	I	
	8	CS2	I	
	8	CW2	I	
	8	CO2	I	
	8	CT2	I	
	and groups of permitted substances for tank code SGAV and SGAN			

Rationalized approach				Hierarchy of tanks
Tank code	Group of permitted substances			Other tank codes permitted for substances under this code
	Class	Classification code	Packing group	
S10AH	6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	T2 T3 T5 T7 TS TW2 TO2 TC2 TC4	I I I I I I I I I	
	and groups of permitted substances for tank code SGAV, SGAN, SGAH and S10AN			

NOTE. This hierarchy does not take account of any special provisions for each entry (see 4.3.5 and 6.8.4)

4.3.4.1.3. The following substances and groups of substances, where a (+) appears in column (12) of table A in Chapter 3.2, are subject to special provisions. In that case the alternative use of the tanks for other substances and groups of substances is not permitted and the hierarchy of 4.3.4.1.2 is not applicable (see also 6.8.4). The requirements for these tanks are given by the following tank codes supplemented by the relevant special provisions indicated in column (13) of table A in Chapter 3.2.

(a) Class 4.1:

UN 2448 sulphur, molten: tank code LGBV

(b) Class 4.2:

UN 1381 phosphorus, white or yellow, dry, under water or in solution; UN 2447 phosphorus, white or yellow, molten: tank code L10DH

(c) Class 4.3:

UN 1389 alkali metal amalgam, UN 1391 alkali metal dispersion or alkaline earth metal dispersion, UN 1392 alkaline earth metal amalgam, UN 1415 lithium, UN 1420 potassium metal alloys, UN 1421 alkali metal alloy, liquid, n.o.s., UN 1422 potassium and sodium alloys, UN 1428 sodium, UN 2257 potassium: tank code L10BN; UN 1407 caesium and UN 1423 rubidium: tank code L10CH

UN 1407 caesium and UN 1423 rubidium: tank code L10CH

(d) Class 5.1:

UN 1873 perchloric acid with more than 50 % but not more than 72 % acid, by mass: tank code L4DN

UN 2015 hydrogen peroxide aqueous solution, stabilized, with more than 70 % hydrogen peroxide: tank code L4DV

UN 2015 hydrogen peroxide, aqueous solution, stabilized, with more than 60 % but not more than 70 % hydrogen peroxide: tank code L4BV

UN 2014 hydrogen peroxide, aqueous solution with more than 20 % but not more than 60 % hydrogen peroxide, UN 3149 hydrogen peroxide and peroxyacetic acid mixture, stabilized: tank code L4BV

(e) Class 5.2:

UN 3109 organic peroxide type F, liquid: tank code L4BN

UN 3110 organic peroxide, type F, solid: tank code S4AN

(f) Class 6.1:

UN 1613 hydrogen cyanide, aqueous solution and UN 3294 hydrogen cyanide solution in alcohol: tank code L15DH

(g) Class 7:

all substances: special tanks

Minimum requirements for liquids: tank code L2.65CN; for solids: tank code S2.65AN.

Notwithstanding the general requirements of this paragraph, tanks used for radioactive material may also be used for the carriage of other goods provided the requirements of 5.1.3.2 are complied with.

(h) Class 8:

UN 1052 hydrogen fluoride, anhydrous and UN 1790 hydrofluoric acid containing more than 85 % hydrogen fluoride: tank code L21DH

UN 1744 bromine or UN 1744 bromine solution: tank code L21DH

UN 1791 hypochlorite solution and UN 1908 chlorite solution: tank code L4BV

4.3.4.2. General requirements

4.3.4.2.1. Where hot substances are loaded, the temperature of the outer surface of the tank or of the thermal insulation shall not exceed 70 °C during carriage.

4.3.4.2.2.	The connecting pipes between the shells of several (Reserved) independent but interconnected tank wagons (complete train, for example) shall be empty during carriage.	(Reserved)
4.3.4.2.3.	When shells approved for liquefied gases of Class 2 are also approved for liquids of other classes, the orange band in accordance with 5.3.5 shall be covered or made unrecognisable by other means so that it is not visible during the carriage of these liquids. During the carriage of these liquids, the particulars according to 6.8.3.5.6(b) or (c) shall no longer be visible on the two sides of the tank-wagon or on the panels.	(Reserved)

4.3.5. *Special provisions*

When they are shown under an entry in column (13) of table A in Chapter 3.2, the following special provisions apply:

TU1 The tanks shall not be handed over for carriage until the substance has solidified completely and been covered by an inert gas. Uncleaned empty tanks which have contained these substances shall be filled with an inert gas.

TU2 The substance shall be covered by an inert gas. Uncleaned empty tanks which have contained these substances shall be filled with an inert gas.

TU3 The inside of the shell and all parts liable to come into contact with the substance shall be kept clean. No lubricant capable of combining dangerously with the substance shall be used for pumps, valves or other devices.

TU4 During carriage, these substances shall be under a layer of inert gas, the gauge pressure of which shall not be less than 50 kPa (0,5 bar).

Uncleaned empty tanks which have contained these substances shall when handed over for carriage be filled with an inert gas at a gauge pressure of at least 50 kPa (0,5 bar).

TU5 (reserved)

TU6 Not authorized for carriage in tanks, battery-wagons and MEGCs when having a LC_{50} < 200 ppm.

TU7 The materials used to ensure leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents.

TU8 An aluminium-alloy tank shall not be used for carriage unless the tank is reserved solely for such carriage and the acetaldehyde is free from acid.

TU9 UN 1203 petrol (gasoline) with a vapour pressure at 50 °C of more than 110 kPa (1,1 bar) but not above 150 kPa (1,5 bar) may also be carried in tanks designed according to 6.8.2.1.14 (a) and having equipment conforming to 6.8.2.2.6.

TU10 (reserved)

TU11 During filling, the temperature of this substance shall not exceed 60 °C. A maximum filling temperature of 80 °C is allowed provided that smoulder spots are prevented during filling and the tanks are hermetically closed. After filling, the tanks shall be pressurized (e.g. with compressed air) to check tightness. It shall be ensured that no depressurization takes place during carriage. Before discharge, it shall be checked if pressure in the tanks is still above atmospheric. If this is not the case, an inert gas shall be introduced into the tanks prior to discharge.

TU12 In the event of a change of use, shells and equipment shall be thoroughly cleansed of all residues before and after the carriage of this substance.

TU13 Tanks shall be free from impurities at the time of filling. Service equipment such as valves and external piping shall be emptied after filling or discharging.

TU14 The closures of the tanks shall be protected with locked caps during carriage.

TU15 Tanks shall not be used for the carriage of foodstuffs, articles of consumption or animal feeds.

TU16 Uncleaned empty tanks, shall, when handed over for carriage, either:

— be filled with nitrogen; or

— be filled with water to not less than 96 % and not more than 98 % of their capacity; between 1 October and 31 March, this water shall contain sufficient anti-freeze agent to make it impossible for the water to freeze during carriage; the anti-freeze agent shall be free from corrosive action and not liable to react with phosphorus.

TU17 Only to be carried in battery-wagons or MEGCs the elements of which are composed of receptacles.

TU18 The degree of filling shall remain below the level at which, if the contents were raised to a temperature at which the vapour pressure equalled the opening pressure of the safety valve, the volume of the liquid would not exceed 95 % of the tank's capacity at that temperature. The requirement in 4.3.2.3.4 shall not apply.

TU19 Tanks may be filled to 98 % at the filling temperature and pressure. The requirement in 4.3.2.3.4 shall not apply.

TU20 (Reserved)

TU21 The substance shall, if water is used as a protective agent, be covered with a depth of not less than 12 cm of water at the time of filling; the degree of filling at a temperature of 60 °C shall not exceed 98 %. If nitrogen is used as a protective agent, the degree of filling at a temperature of 60 °C shall not exceed 96 %. The remaining space shall be filled with nitrogen in such a way that, even after cooling, the pressure at no time falls below atmospheric pressure. The tank shall be closed in such a way that no leakage of gas occurs.

TU22 Tanks shall be filled to not more than 90 % of their capacity; a space of 5 % shall remain empty when the liquid is at an average temperature of 50 °C.

TU23 The degree of filling shall not exceed 0,93 kg per litre of capacity, if filling is by mass. If filling is by volume, the degree of filling shall not exceed 85 %.

TU24 The degree of filling shall not exceed 0,95 kg per litre of capacity, if filling is by mass. If filling is by volume, the degree of filling shall not exceed 85 %.

TU25 The degree of filling shall not exceed 1,14 kg per litre of capacity, if filling is by mass. If filling is by volume, the degree of filling shall not exceed 85 %.

TU26 The degree of filling shall not exceed 85 %.

TU27 Tanks shall not be filled to more than 98 % of their capacity.

TU28 Tanks shall not be filled to more than 95 % of their capacity at a reference temperature of 15 °C.

TU29 Tanks shall not be filled to more than 97 % of their capacity and the maximum temperature after filling shall not exceed 140 °C.

TU30 Tanks shall be filled as set out in the test report for the type approval of the tank but shall be filled to not more than 90 % of their capacity.

TU31 Tanks shall not be filled to more than 1 kg per litre of capacity.

TU32 Tanks shall not be filled to more than 88 % of their capacity.

TU33 Tanks shall be filled to not less than 88 % and not more than 92 % of their capacity or to 2,86 kg per litre of capacity.

TU34 Tanks shall not be filled to more than 0,84 kg per litre of capacity.

TU35 Empty, uncleaned tank wagons, empty, uncleaned demountable tanks and empty, uncleaned tank-containers which have contained these substances are not subject to the requirements of this Directive, provided suitable measures have been taken to nullify any hazards.

TU36 At a reference temperature of 15 °C, the degree of filling in accordance with 4.3.2.2 shall not exceed 93 % of the capacity.

Chapter 4.4

Use of fibre-reinforced plastics (FRP) tank-containers

NOTE. For portable tanks, see Chapter 4.2; for tank wagons, demountable tanks, tank containers and swap bodies with shells made of metallic minerals and battery-wagons, and multiple-element gas containers (MEGCs), see Chapter 4.3.

4.4.1. *General*

The carriage of dangerous substances in fibre-reinforced plastics (FRP) tank-containers is permitted only when the following conditions are met:

(a) The substance is classified in class 3, 5.1, 6.1, 6.2, 8 or 9;

(b) The maximum vapour pressure (absolute pressure) at 50 °C of the substance does not exceed 110 kPa (1,1 bar);

(c) The carriage of the substance in metallic tanks is authorized according to 4.3.2.1.1;

(d) The calculation pressure specified for that substance in part 2 of the tank code given in column (12) of Table A in Chapter 3.2 does not exceed 4 bar (see also 4.3.4.1.1) and,

(e) The tank-container complies with the requirements of Chapter 6.9 applicable for the carriage of the substance.

4.4.2. *Operation*

4.4.2.1 The requirements of 4.3.2.1.5 to 4.3.2.2.4, 4.3.2.3.3 to 4.3.2.3.6, 4.3.2.4.1 and 4.3.2.4.2 and 4.3.4.2 shall apply.

4.4.2.2 The temperature of the substance carried shall not exceed, at the time of filling, the maximum service temperature indicated on the tank plate referred to in 6.9.6.

4.4.2.3 When applicable to carriage in metallic tanks, the special provisions (TU) of 4.3.5 shall also apply.

Part 5

CONSIGNMENT PROCEDURES

CHAPTER 5.1

General Provisions

5.1.1. *Scope and general provisions*

This Part sets forth the provisions for dangerous goods consignments relative to marking, labelling, and documentation, and, where appropriate, authorization of consignments and advance notifications.

5.1.2. *Use of overpacks*

5.1.2.1. An overpack shall be marked and labelled, as required for packages by Chapter 5.2, for each package contained in the overpack, unless markings and labels representative of all dangerous goods contained in the overpack are visible. If a specific label is required for different packages, it only needs to be applied once.

5.1.2.2. Each package of dangerous goods contained in an overpack shall comply with all applicable provisions of this Directive. The intended function of each package shall not be impaired by the overpack.

5.1.2.3. The prohibitions on mixed loading also apply to these overpacks.

5.1.3. *Empty uncleaned packagings (including ibcs and large packagings), empty tanks, empty wagons and empty containers for carriage in bulk*

5.1.3.1. Empty uncleaned packagings (including IBCs and large packagings), tanks (including tank wagons, battery wagons, demountable tanks, portable tanks, tank-containers and MEGCs), empty wagons and empty containers for carriage in bulk, not degassed and not decontaminated, having contained dangerous goods of the different classes other than Class 7, shall be marked and labelled or placarded as if they were full.

NOTE. For documentation, see chapter 5.4.

5.1.3.2. Tanks and IBCs used for the carriage of radioactive material shall not be used for the storage or carriage of other goods unless decontaminated below the level of 0,4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters and 0,4 Bq/cm^2 for all other alpha emitters.

5.1.4. *Mixed packing*

When two or more dangerous goods are packed within the same outer packaging, the package shall be labelled and marked as required for each substance or article. If the same label is required for different goods, it only needs to be applied once.

5.1.5. *General provisions for Class 7*

5.1.5.1. Requirements before shipment

5.1.5.1.1. Requirements before the first shipment of a package

Before the first shipment of any package, the following requirements shall be fulfilled:

(a) If the design pressure of the containment system exceeds 35 kPa (gauge), it shall be ensured that the containment system of each package conforms to the approved design requirements relating to the capability of that system to maintain its integrity under that pressure;

(b) For each Type B(U), Type B(M) and Type C package and for each package containing fissile material, it shall be ensured that the effectiveness of its shielding and containment and, where necessary, the heat transfer characteristics and the effectiveness of the confinement system, are within the limits applicable to or specified for the approved design;

(c) For packages containing fissile material, where, in order to comply with the requirements of 6.4.11.1, neutron poisons are specifically included as components of the package, checks shall be performed to confirm the presence and distribution of those neutron poisons.

5.1.5.1.2. Requirements before each shipment of a package

Before each shipment of any package, the following requirements shall be fulfilled:

(a) For any package it shall be ensured that all the requirements specified in the relevant provisions of this Directive have been satisfied;

(b) It shall be ensured that lifting attachments which do not meet the requirements of 6.4.2.2 have been removed or otherwise rendered incapable of being used for lifting the package, in accordance with 6.4.2.3;

(c) For each Type B(U), Type B(M) and Type C package and for each package containing fissile material, it shall be ensured that all the requirements specified in the approval certificates have been satisfied;

(d) Each Type B(U), Type B(M) and Type C package shall be held until equilibrium conditions have been approached closely enough to demonstrate compliance with the requirements for temperature and pressure unless an exemption from these requirements has received unilateral approval;

(e) For each Type B(U), Type B(M) and Type C package, it shall be ensured by inspection and/or appropriate tests that all closures, valves, and other openings of the containment system through which the radioactive contents might escape are properly closed and, where appropriate, sealed in the manner for which the demonstrations of compliance with the requirements of 6.4.8.7 were made;

(f) For each special form radioactive material, it shall be ensured that all the requirements specified in the special form approval certificate and the relevant provisions of this Directive have been satisfied;

(g) For packages containing fissile material the measurement specified in 6.4.11.4(b) and the tests to demonstrate closure of each package as specified in 6.4.11.7 shall be performed where applicable;

(h) For each low dispersible radioactive material, it shall be ensured that all the requirements specified in the approval certificate and the relevant provisions of this Directive have been satisfied.

5.1.5.2. Approval of shipments and notification

5.1.5.2.1. General

In addition to the approval for package designs described in Chapter 6.4, multilateral shipment approval is also required in certain circumstances (5.1.5.2.2 and 5.1.5.2.3). In some circumstances it is also necessary to notify competent authorities of a shipment (5.1.5.2.4).

5.1.5.2.2. Shipment approvals

Multilateral approval shall be required for:

(a) the shipment of Type B(M) packages not conforming with the requirements of 6.4.7.5 or designed to allow controlled intermittent venting;

(b) the shipment of Type B(M) packages containing radioactive material with an activity greater than 3 000 A_1 or 3 000 A_2, as appropriate, or 1 000 TBq, whichever is the lower;

(c) the shipment of packages containing fissile materials if the sum of the criticality safety indexes of the packages exceeds 50;

except that a competent authority may authorize carriage into or through its country without shipment approval, by a specific provision in its design approval (see 5.1.5.3.1).

5.1.5.2.3. Shipment approval by special arrangement

Provisions may be approved by a competent authority under which a consignment, which does not satisfy all of the applicable requirements of this Directive may be carried under special arrangement (see 1.7.4).

5.1.5.2.4. Notifications

Notification to competent authorities is required as follows:

(a) Before the first shipment of any package requiring competent authority approval, the consignor shall ensure that copies of each applicable competent authority certificate applying to that package design have been submitted to the competent authority of each country through or into which the consignment is to be transported. The consignor is not required to await an acknowledgement from the competent authority, nor is the competent authority required to make such acknowledgement of receipt of the certificate;

(b) For each of the following types of shipments:

(i) Type C packages containing radioactive material with an activity greater than 3 000 A_1 or 3 000 A_1, as appropriate, or 1 000 TBq, whichever is the lower;

(ii) Type B(U) packages containing radioactive material with an activity greater than 3 000 A_1 or 3 000 A_2, as appropriate, or 1 000 TBq, whichever is the lower;

(iii) Type B(M) packages;

(iv) Shipment under special arrangement;

the consignor shall notify the competent authority of each country through or into which the consignment is to be carried. This notification shall be in the hands of each competent authority prior to the commencement of the shipment, and preferably at least 7 days in advance;

(c) The consignor is not required to send a separate notification if the required information has been included in the application for shipment approval;

(d) The consignment notification shall include:

(i) sufficient information to enable the identification of the package or packages including all applicable certificate numbers and identification marks;

(ii) information on the date of shipment, the expected date of arrival and proposed routeing;

(iii) the name(s) of the radioactive material or nuclide(s);

(iv) descriptions of the physical and chemical forms of the radioactive material, or whether it is special form radioactive material or low dispersible radioactive material; and

(v) the maximum activity of the radioactive contents during carriage expressed in becquerels (Bq) with an appropriate SI prefix (see 1.2.2.1). For fissile material, the mass of fissile material in grams (g), or multiples thereof, may be used in place of activity.

5.1.5.3. Certificates issued by the competent authority

5.1.5.3.1. Certificates issued by the competent authority are required for the following:

(a) Designs for:

(i) special form radioactive material;

(ii) low dispersible radioactive material;

(iii) packages containing 0,1 kg or more of uranium hexafluoride;

(iv) all packages containing fissile material unless excepted by 6.4.11.2;

(v) Type B(U) packages and Type B(M) packages;

(vi) Type C packages;

(b) Special arrangements;

(c) Certain shipments (see 5.1.5.2.2).

The certificates shall confirm that the applicable requirements are met, and for design approvals shall attribute to the design an identification mark.

The package design and shipment approval certificates may be combined into a single certificate.

Certificates and applications for these certificates shall be in accordance with the requirements of 6.4.23.

5.1.5.3.2. The consignor shall be in possession of a copy of each applicable certificate. The consignor shall also have a copy of any instructions with regard to the proper closing of the package and any preparation for shipment before making any shipment under the terms of the certificates.

5.1.5.3.3. For package designs where a competent authority issued certificate is not required, the consignor shall, on request, make available for inspection by the competent authority, documentary evidence of the compliance of the package design with all the applicable requirements.

5.1.5.4. Summary of approval and prior notification requirements

NOTE 1. Before first shipment of any package requiring competent authority approval of the design, the consignor shall ensure that a copy of the approval certificate for that design has been submitted to the competent authority of each country en route (see 5.1.5.2.4 a).

NOTE 2. Notification required if contents exceed 3×10^3 A_1, or 3×10^3 A_2, or 1 000 TBq; (see 5.1.5.2.4 b).

NOTE 3. Multilateral approval of shipment required if contents exceed 3 x 10^3 A_1, or 3×10^3 A_2 or 1 000 TBq, or if controlled intermittent venting is allowed (see 5.1.5.2).

NOTE 4. See approval and prior notification requirements for the applicable package for carrying this material.

Subject	UN-Number	Competent authority approval required		Consignor required to notify the competent authorities of the country of origin and of the countries en route ([a]) before each shipment	Reference
		Country of origin	Countries en route ([a])		
Calculation of unlisted A_1 and A_2 values	—	Yes	Yes	No	—
Excepted packages	2908, 2909, 2910, 2911				—
— package design		No	No	No	
— shipment		No	No	No	
LSA material ([b]) and SCO ([b]) Industrial packages types 1, 2 or 3, non fissile and fissile excepted	2912, 2913, 3321, 3322				—
— package design		No	No	No	
— shipment		No	No	No	
Type A packages ([b]) non fissile and fissile excepted	2915, 3332				—
— package design		No	No	No	
— shipment		No	No	No	

Subject	UN-Number	Competent authority approval required		Consignor required to notify the competent authorities of the country of origin and of the countries en route ([a]) before each shipment	Reference
		Country of origin	Countries en route ([a])		
Type B(U) packages ([b]), non fissile and fissile excepted	2916				5.1.5.2.4 (b), 5.1.5.3.1 (a) 6.4.22.2
— package design		Yes	No	See Note 1	
— shipment		No	No	See Note 2	
Type B(M) packages ([b]), non fissile and fissile excepted	2917				5.1.5.2.4 (b), 5.1.5.3.1 (a) 5.1.5.2.2, 6.4.22.3
— package design		Yes	Yes	No	
— shipment		See Note 3	See Note 3	Yes	
Type C packages ([b]), non and fissile excepted	3323				5.1.5.2.4 (b), 5.1.5.3.1 (a) 6.4.22.2
— package design		Yes	No	See Note 1	
— shipment		No	No	See Note 2	
Packages for fissile material	2977, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3333				5.1.5.3.1 (a), 5.1.5.2.2, 6.4.22.4
— package design		Yes ([c])	Yes ([c])	No	
— shipment					
sum of criticality safety indexes not more than 50		No ([d])	No ([d])	See Note 2	
sum of criticality safety indexes greater than 50		Yes	Yes	See Note 2	
Special form radioactive material					1.6.6.3, 5.1.5.3.1 (a) 6.4.22.5
— design	—	Yes	No	No	
— shipment	See Note 4	See Note 4	See Note 4	See Note 4	
Low dispersible radioactive material					5.1.5.3.1 (a), 6.4.22.3
— design	—	Yes	No	No	
— shipment	See Note 4	See Note 4	See Note 4	See Note 4	

Subject	UN-Number	Competent authority approval required		Consignor required to notify the competent authorities of the country of origin and of the countries en route ([a]) before each shipment	Reference
		Country of origin	Countries en route ([a])		
Packages containing 0,1 kg or more of uranium hexafluoride					5.1.5.3.1 (a), 6.4.22.1
— design	—	Yes	No	No	
— shipment	See Note 4	See Note 4	See Note 4	See Note 4	
Special arrangement	2919, 3331				5.1.5.3.1 (b), 5.1.5.2.4 (b)
— shipment					
Approved packages designs subjected to transitional measures	—	See 1.6.6	See 1.6.6	See Note 1	1.6.6.2, 5.1.5.2.4 (b), 5.1.5.3.1 (a), 5.1.5.2.2

([a]) Countries from, through or into which the consignment is carried.
([b]) If the radioactive contents are fissile material which is not excepted from the requirements for packages containing fissile material, then the requirements for fissile material packages apply (see 6.4.11).
([c]) Designs of packages for fissile material may also require approval in respect of one of the other items in the table.
([d]) Shipments may, however, require approval in respect of one of the other items in the table.

CHAPTER 5.2

Marking and labelling

5.2.1 *Marking of packages*

NOTE. For markings related to the construction, testing and approval of packagings, large packagings, gas receptacles and IBCs, see Part 6.

5.2.1.1. Unless provided otherwise in RID, the UN number corresponding to the dangerous goods contained, preceded by the letters 'UN' shall be clearly and durably marked on each package. In the case of unpackaged articles the marking shall be displayed on the article, on its cradle or on its handling, storage or launching device.

5.2.1.2. All package markings required by this Chapter:

(a) shall be readily visible and legible;

(b) shall be able to withstand open weather exposure without a substantial reduction in effectiveness.

5.2.1.3. Salvage packagings shall additionally be marked with the word 'SALVAGE'.

5.2.1.4. Intermediate bulk containers of more than 450 litres capacity shall be marked on two opposite sides.

5.2.1.5. Additional requirements for goods of Class 1

For goods of Class 1, packages shall, in addition, bear the proper shipping name as determined in accordance with 3.1.2. The marking, which shall be clearly legible and indelible, shall be in an official language of the country of origin and also, if that language is not English, French, German or Italian, in English, French, German or Italian unless any international tariffs or agreements concluded between the railways provide otherwise.

5.2.1.6. Additional requirements for goods of Class 2

Refillable receptacles shall bear the following particulars in clearly legible and durable characters:

(a) the UN number and the proper shipping name of the gas or mixture of gases, as determined in accordance with 3.1.2.

In the case of gases classified under an n.o.s. entry, only the technical name (1) of the gas has to be indicated in addition to the UN number.

In the case of mixtures, not more than the two constituents which most predominantly contribute to the hazards have to be indicated;

(b) for compressed gases filled by mass and for liquefied gases, either the maximum filling mass and the tare of the receptacle with fittings and accessories as fitted at the time of filling, or the gross mass;

(c) the date (year) of the next periodic inspection.

These marks can either be engraved or indicated on a durable information disk or label attached on the receptacle or indicated by an adherent and clearly visible marking such as by printing or by any equivalent process.

NOTE 1. See also 6.2.1.7.1.

NOTE 2. For non-refillable receptacles, see 6.2.1.7.2.

5.2.1.7. Special marking requirements for material of Class 7

5.2.1.7.1. Each package shall be legibly and durably marked on the outside of the packaging with an identification of either the consignor or consignee, or both.

5.2.1.7.2. For each package, other than excepted packages, the UN number preceded by the letters ‘UN’ and the proper shipping name shall be legibly and durably marked on the outside of the packaging. In the case of excepted packages only the UN number, preceded by the letters ‘UN’, is required.

5.2.1.7.3. Each package of gross mass exceeding 50 kg shall have its permissible gross mass legibly and durably marked on the outside of the packaging.

5.2.1.7.4. Each package which conforms to:

(a) an Industrial package Type 1, an Industrial package Type 2 or an Industrial package Type 3 design shall be legibly and durably marked on the outside of the packaging with ‘TYPE IP-1’, ‘TYPE IP-2’ or ‘TYPE IP-3’ as appropriate;

(b) a Type A package design shall be legibly and durably marked on the outside of the packaging with ‘TYPE A’;

(c) an Industrial package Type 2, an Industrial package Type 3 or a Type A package design shall be legibly and durably marked on the outside of the packaging with the international vehicle registration code (VRI Code) (2) of the country of origin of design and the name of the manufacturers, or other identification of the packaging specified by the competent authority.

5.2.1.7.5. Each package which conforms to a design approved by the competent authority shall be legibly and durably marked on the outside of the packaging with:

(a) the identification mark allocated to that design by the competent authority;

(b) a serial number to uniquely identify each packaging which conforms to that design;

(c) in the case of a Type B(U) or Type B(M) package design, with ‘TYPE B(U)’ or ‘TYPE B(M)’; and

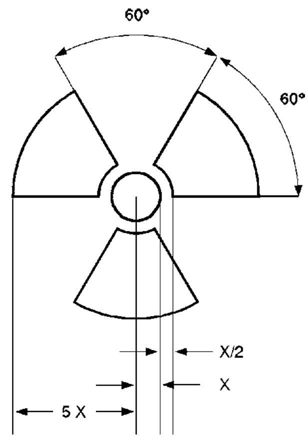
(d) in the case of a Type C package design, with ‘TYPE C’.

(1) Instead of the technical name the use of one of the following names is permitted:
— For UN 1078 refrigerant gas, n.o.s.: mixture F1, mixture F2, mixture F3;
— For UN 1060 methylacetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;
— For UN 1965 hydrocarbon gas mixture, liquefied, n.o.s.: mixture A or butane, mixture $A0_1$ or butane, mixture $A0_2$ or butane, mixture A0 or butane, mixture A1, mixture B1, mixture B2, mixture B, mixture C or propane.

(2) Distinguishing sign for motor vehicles in international traffic prescribed in the Vienna Convention on Road Traffic (1968).

5.2.1.7.6. Each package which conforms to a Type B(U), Type B(M) or Type C package design shall have the outside of the outermost receptacle which is resistant to the effects of fire and water plainly marked by embossing, stamping or other means resistant to the effects of fire and water with the trefoil symbol shown in the figure below.

Basic trefoil symbol with proportions based on a central circle of radius X.
The minimum allowable size of X shall be 4 mm.



5.2.1.7.7. Where LSA-I or SCO-I material is contained in receptacles or wrapping materials and is carried under exclusive use as permitted by 4.1.9.2.3, the outer surface of these receptacles or wrapping materials may bear the marking 'RADIOACTIVE LSA-I' or 'RADIOACTIVE SCO-I', as appropriate.

5.2.2. *Labelling of packages*

NOTE. For labelling purposes, small containers shall be considered as packages.

5.2.2.1. Labelling requirements

5.2.2.1.1. For each substance or article listed in Table A of Chapter 3.2, the danger labels shown in column (5) shall be affixed unless otherwise provided for by a special provision in column (6).

5.2.2.1.2. Indelible danger markings corresponding exactly to the prescribed models may be used instead of labels.

5.2.2.1.3.
—
5.2.2.1.5. (Reserved)

5.2.2.1.6. Each label shall:

(a) be affixed to the same surface of the package, if the dimensions of the package allow; for packages containing goods of Class 1 or 7, near the mark indicating the proper shipping name;

(b) be so placed on the package that it is not covered or obscured by any part or attachment to the packaging or any other label or marking;

(c) be displayed when more than one label is required.

Where a package is of such an irregular shape or small size that a label cannot be satisfactorily affixed, the label may be attached to the package by a securely affixed tag or other suitable means.

5.2.2.1.7. Intermediate bulk containers of more than 450 litres capacity shall be labelled on two opposite sides.

5.2.2.1.8. Special requirements for the labelling of packages containing explosive substances or articles when carried as a military consignment.

For the carriage of military consignments within the meaning of 1.5.2, as a full wagon load or wagon load it shall not be necessary for packages to bear the danger labels prescribed in column (5) of Table A of Chapter 3.2, provided that the mixed loading requirements prescribed in 7.5.2 are observed on the basis of the information in the consignment note, in accordance with 5.4.1.2.1(f).

5.2.2.1.9. Special provisions for the labelling of self-reactive substances and organic peroxides

(a) The label conforming to model No. 4.1 also implies that the product may be flammable and hence no label conforming to model No. 3 is required. In addition, a label conforming to model No. 1 shall be applied for self-reactive substances Type B, unless the competent authority has permitted this label to be dispensed with for a specific packaging because test data have proven that the self-reactive substance in such a packaging does not exhibit explosive behaviour.

(b) The label conforming to model No. 5.2 also implies that the product may be flammableand hence no label conforming to model No. 3 is required. In addition, the followinglabels shall be applied:

(i) A label conforming to model No. 1 for organic peroxides type B, unless thecompetent authority has permitted this label to be dispensed with for a specific packaging because test data have proven that the organic peroxide in such a packaging does not exhibit explosive behaviour;

(ii) A label conforming to model No. 8 is required when Packing Group I or II criteria of Class 8 are met.

For self-reactive substances and organic peroxides mentioned by name, the labels to beaffixed are indicated in the list in 2.2.41.4 and 2.2.52.4 respectively.

5.2.2.1.10. Special provisions for the labelling packages containing infectious substances

In addition to the label conforming to model No. 6.2, packages containing infectioussubstances shall bear any other label required by the nature of the contents.

5.2.2.1.11. Special provisions for the labelling of radioactive material

5.2.2.1.11.1. Except as provided for large containers and tanks in accordance with 5.3.1.1.3, each package, overpack and container containing radioactive material shall bear labels which conform to models Nos. 7A, 7B and 7C as appropriate according to the category (see 2.2.7.8.4) of that package, overpack or container. Labels shall be affixed to two opposite sides on the outside of the package or on the outside of all four sides of the container. Each overpack containing radioactive material shall bear at least two labels on opposite sides ofthe outside of the overpack. In addition, each package, overpack and container containing fissile material, other than fissile material excepted under 6.4.11.2 shall bear labels which conform to model No. 7E; such labels, where applicable shall be affixed adjacent to the labels for radioactive material. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

5.2.2.1.11.2. Each label conforming to models Nos. 7A, 7B and 7C shall be completed with the following information.

(a) Contents:

(i) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2.2.7.7.2.1, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides shall be listed to the extent the space on the line permits. The group of LSA or SCO shall be shown following the name(s) of theradionuclide(s). The terms 'LSA-II', 'LSA-III', 'SCO-I' and 'SCO-II' shall be used for this purpose;

(ii) for LSA-I material, only the term 'LSA-I' is necessary; the name of the radionuclide is not necessary;

(b) Activity: The maximum activity of the radioactive contents during carriage expressed in becquerels (Bq) with the appropriate SI prefix (see 1.2.2.1). For fissile material, the mass of fissile material in grams (g), or multiples thereof, may be used in place of activity;

(c) For overpacks and containers the 'contents' and 'activity' entries on the label shall bear the information required in (a) and (b) below, respectively, totalled together for the entire contents of the overpack or container except that on labels for overpacks or containers containing mixed loads of packages containing different radionuclides, such entries may read 'See Consignment Note';

(d) Transport index: see 2.2.7.6.1.1 and 2.2.7.6.1.2 (no transport index entry is required for category I-WHITE).

5.2.2.1.11.3. Each label conforming to model number 7E shall be completed with the criticality safety index (CSI) as stated in the certificate of approval for special arrangement or the certificate of approval for the package design issued by the competent authority.

5.2.2.1.11.4. For overpacks and containers, the criticality safety index (CSI) on the label shall bear the information required in 5.2.2.1.11.3 totalled together for the fissile contents of the overpack or container.

5.2.2.1.12. Additional labelling

With the exception of Classes 1 and 7, Label No. 11 illustrated in 5.2.2.2.2 shall be displayed on two opposite sides of a package on the following packages:

— packages containing liquids in receptacles, the closures of which are not visible from the outside;

— packages containing vented receptacles or vented receptacles without outer packaging; and

— packages containing refrigerated liquefied gases.

5.2.2.2. Provisions for labels

5.2.2.2.1. Labels shall satisfy the provisions below and conform, in terms of colour, symbols and general format, to the models shown in 5.2.2.2.2.

5.2.2.2.1.1. Labels, except label No. 11, shall be in the form of a square (diamond-shaped) with minimum dimensions of 100 mm by 100 mm. They have a line of the same colour as the symbol, 5 mm inside the edge and running parallel with it. Label No. 11 shall be rectangular, of standard format A5 (148 x 210 mm). If the size of the package so requires, the dimensions of the labels may be reduced, provided that they remain clearly visible.

5.2.2.2.1.2. Gas cylinders for Class 2 may, on account of their shape, orientation and securing mechanisms for carriage, bear labels representative of those specified in this section, which have been reduced in size, according to the dimensions outlined in ISO 7225:1994, Marking and Labelling ‘Precautionary labels for gas cylinders’, for display on the non-cylindrical part (shoulder) of such cylinders.

5.2.2.2.1.3. Labels, except label No. 11, are divided into halves. With the exception of Divisions 1.4, 1.5 and 1.6, the upper half of the label is reserved for the pictorial symbol and the lower half for texts and the class number and the compatibility group letter as appropriate.

NOTE. For the labels of Classes 1, 2, 3, 5.1, 5.2, 7, 8 and 9, the respective class number shall be shown in the bottom corner. For the labels of Classes 4.1, 4.2 and 4.3 and of Classes 6.1 and 6.2 only figures 4 and 6 respectively shall be shown in the bottom corner (see 5.2.2.2.2).

5.2.2.2.1.4. Except for Divisions 1.4, 1.5 and 1.6, labels for Class 1 show in the lower half the division number and compatibility group letter for the substance or article. Labels for Divisions 1.4, 1.5 and 1.6 show in the upper half the division number and in the lower half the compatibility group letter.

5.2.2.2.1.5. On labels other than those for material of Class 7, the optional insertion of any text (other than the class number) in the space below the symbol shall be confined to particulars indicating the nature of the risk and precautions to be taken in handling.

5.2.2.2.1.6. The symbols, text and numbers shall be clearly legible and indelible and shall be shown in black on all labels except for:

(a) the Class 8 label, where the text (if any) and class number shall appear in white; and

(b) labels with entirely green, red or blue backgrounds where they may be shown in white.

5.2.2.2.1.7. All labels shall be able to withstand open weather exposure without a substantial reduction in effectiveness.

5.2.2.2.2. Specimen labels

CLASS 1
Explosive substances and articles

(No 1)
Divisions 1.1, 1.2 and 1.3

Symbol (exploding bomb): black; Background: orange; Figure '1' in bottom corner

(No 1.4)
Division 1.4

(No 1.5)
Division 1.5

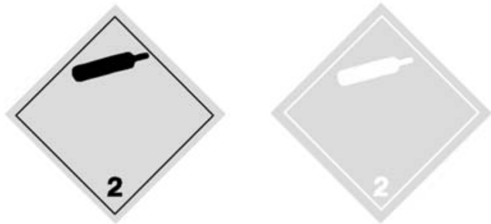
(No 1.6)
Division 1.6

Background: orange; Figures: black; Numerals shall be about 30 mm in height
and be about 5 mm thick (for a label measuring 100 mm x 100 mm); figure '1' in bottom corner

** Place for division — to be left blank if explosive is the subsidiary risk.
* Place for compatibility group – to be left blank if explosive is the subsidiary risk.

CLASS 2
Gases

(No 2.1)
Flammable gases
Symbol (flame): black or white;
Background: red; Figure '2' in bottom corner



(No 2.2)
Non-flammable, non-toxic gases
Symbol (gas cylinder): black or white;
Background: green; Figure '2' in bottom corner

(No 2.3)
Toxic gases
Symbol (skull and crossbones): black;
Background: white; Figure '2' in bottom corner

CLASS 3
Flammable liquids

(No 3)
Symbol (flame): black or white;
Background: red; Figure '3' in bottom corner

CLASS 4.1
Flammable solids

(No 4.1)
Symbol (flame): black;
Background white with seven vertical red stripes;
Figure '4' in bottom corner

CLASS 4.2
Substances liable to spontaneous combustion

(No 4.2)
Symbol (flame): black;
Background: upper half white, lower half red;
Figure '4' in bottom corner

CLASS 4.3
Substances which in contact with water emit flammable gases

(No 4.3)
Symbol (flame): black or white;
Background: blue;
Figure '4' in bottom corner

CLASS 5.1
Oxidizing substances

(No 5.1)

CLASS 5.2
Organic peroxides

(No 5.2)

Symbol (flame over circle): black; Background: yellow;

Figures '5.1' in bottom corner

Figures '5.2' in bottom corner

CLASS 6.1
Toxic substances

(No 6.1)
Symbol (skull and crossbones): black;
Background: white; Figure '6' in bottom corner

CLASS 6.2
Infectious substances

(No 6.2)
The lower half of the label may bear the inscriptions: 'INFECTIOUS SUBSTANCE' and 'In the case of damage or leakage immediately notify Public Health Authority'
Symbol (three crescents superimposed on a circle) and inscriptions black;
Background: white; Figure '6' in bottom corner

CLASS 7
Radioactive material

(No 7A)
Category I — White
symbol (trefoil): black;
Background: white;
Text (mandatory):
black in lower half of label:
'RADIOACTIVE'
'Contents…'
'Activity…'
One red bar shall
follow the word 'Radioactive';
Figure '7' in bottom corner

(No 7B)
Category II — Yellow

(No 7C)
Category III — Yellow

Symbol (trefoil): black;
Background: upper half yellow with white border, lower half white;
Text (mandatory): black in lower half of label:
'RADIOACTIVE',
'Contents …',
'Activity…'
In a black outlined box: 'Transport Index';

Two red vertical bars shall follow
the word 'Radioactive';

Three red vertical bars shall follow
the word 'Radioactive';

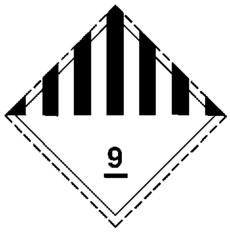
Figure '7' in bottom corner

(No 7E)
Class 7 fissile material
Background: white;
Text (mandatory): black in upper half of label: 'FISSILE';
In a black outlined box in the lower half of the label:
'CRITICALITY SAFETY INDEX'
Figure '7' in bottom corner

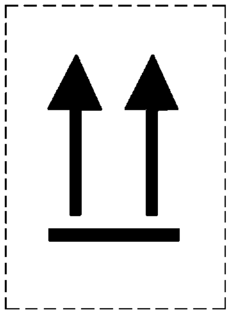
CLASS 8
Corrosive substances

(No 8)
Symbol (liquids, spilling from two glass test tubes
and attacking a hand and a metal): black;
Background: upper white half;
lower half black with white border;
Figure '8' in bottom corner

CLASS 9
Miscellaneous dangerous substances and articles



(No 9)
Symbol (seven vertical stripes in upper half): black;
Background: white;
Figure '9' underlined in bottom corner



(No 11)
Two black arrows on white
or suitable contrasting background

CHAPTER 5.3

Placarding and marking

NOTE. For placarding and marking of containers, MEGCs, tank-containers and portable tanks for carriage in a transport chain including a maritime journey, see also 1.1.4.2.

5.3.1. *Placarding*

5.3.1.1. General provisions

5.3.1.1.1. Placards shall be affixed to the exterior surface of large containers, MEGCs, tank-containers, portable tanks and wagons, in accordance with the requirements of this section. Placards shall correspond to the labels required in column (5) and, where appropriate, column (6) of Table A of Chapter 3.2 for the dangerous goods contained in the large container, MEGC, tank-container, portable tank or wagon and shall conform to the specifications given in 5.3.1.7.

NOTE. For shunting model labels Nos. 13 and 15, see 5.3.4.

5.3.1.1.2. For Class 1, compatibility groups shall not be indicated on placards if the wagon or large container is carrying substances or articles belonging to two or more compatibility groups. Wagons or large containers carrying substances or articles of different divisions shall bear only placards conforming to the model of the most dangerous division in the order:

1.1 (most dangerous), 1.5, 1.2, 1.3, 1.6, 1.4 (least dangerous).

When 1.5 D substances are carried with substances or articles of Division 1.2, placards for Division 1.1 shall be affixed to the wagon or large container.

Wagons and large containers in which packages are loaded to be carried as military consignments, within the meaning of 1.5.2, and which in conformity with 5.2.2.1.8 do not bear danger labels, shall, in the case of wagons, bear on both sides and, in the case of large containers, bear on all four sides, the placards in accordance with column (5) of Table A of Chapter 3.2.

5.3.1.1.3. For Class 7, the primary risk placard shall conform to model No. 7D as specified in 5.3.1.7.2. This placard is not required for wagons or large containers carrying excepted packages.

Where both Class 7 labels and placards would be required to be affixed to wagons, large containers, MEGCs, tank-containers or portable tanks, an enlarged label corresponding to the label required may be displayed instead of placard No. 7D to serve both purposes.

5.3.1.1.4. Containers, MEGCs, tank-containers, portable tanks or wagons containing goods of more than one class need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary or subsidiary risk placard.

5.3.1.1.5. Placards which do not relate to the dangerous goods being carried, or residues thereof, shall be removed or covered.

5.3.1.2. Placarding of large containers, MEGCs, tank-containers and portable tanks

The placards shall be affixed to both sides and at each end of the large container, MEGC, tank-container or portable tank.

5.3.1.3. Placarding of wagons carrying large containers, MEGCs, tank-containers or portable tanks and of wagons used for piggyback transport

5.3.1.3.1. If the placards affixed to the large containers, MEGCs, tank-containers or portable tanks are not visible from outside the carrying wagons, the same placards shall also be affixed to both sides of the wagon. Otherwise, no placard need be affixed on the carrying wagon.

5.3.1.3.2. Carrying wagons used in piggyback transport shall bear the placards on both sides.

The placarding of carrying wagons used in piggyback transport is not necessary

(a) where use is made of the 'rolling road' system (loading of lorries with or without trailer and of semi-trailers with tractor on wagons used for this system of transport), unless the railways concerned on a particular route decide to the contrary, and

(b) for other carriage of road tank vehicles and road vehicles carrying dangerous goods in bulk.

5.3.1.4. Placarding of wagons for carriage in bulk, tank wagons, battery wagons and wagons with demountable tanks

Placards shall be affixed to both sides.

5.3.1.5. Placarding of wagons carrying packages only

Placards shall be affixed to both sides.

5.3.1.6. Placarding of empty tank wagons, battery wagons, MEGCs, tank-containers and portable tanks and empty wagons and large containers for carriage in bulk

Empty tank wagons, wagons with demountable tanks, battery wagons, MEGCs, tank-containers and portable tanks, uncleaned and not degassed or decontaminated, and empty wagons and large containers for carriage in bulk, uncleaned or not decontaminated, shall continue to display the placards required for the previous load.

5.3.1.7. Specifications for placards

5.3.1.7.1. Except as provided in 5.3.1.7.2 for the Class 7 placard, a placard shall:

(a) Be not less than 250 mm by 250 mm, with a line of the same colour as the symbol running 12,5 mm inside the edge and parallel with it;

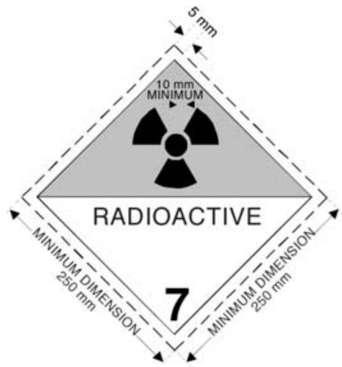
(b) Correspond to the label required for the dangerous goods in question with respect to colour and symbol (see 5.2.2.2); and

(c) Display the numbers (and for goods of Class 1, the compatibility group letter) prescribed for the dangerous goods in question in 5.2.2.2 for the corresponding label, in digits not less than 25 mm high.

The requirements of 5.2.2.1.2 shall also apply.

5.3.1.7.2. The Class 7 placard shall be not less than 250 mm by 250 mm with a black line running 5 mm inside the edge and parallel with it and is otherwise as shown below (Model No. 7D). The number '7' shall not be less than 25 mm high. The background colour of the upper half of the placard shall be yellow and of the lower half white, the colour of the trefoil and the printing shall be black. The use of the word 'RADIOACTIVE' in the bottom half is optional to allow the use of this placard to display the appropriate United Nations number for the consignment.

Placard for radioactive material of Class 7



(No 7D)
Symbol (trefoil): black;
Background: upper half yellow with white border, lower half white
The lower half shall show the word RADIOACTIVE or in its place, when required, the appropriate UN No (see 5.3.2.1.2) and the figure '7' in the bottom corner.

5.3.1.7.3. For tank-containers with a capacity of not more than 3 m^3, placards may be replaced by labels conforming to 5.2.2.2.

5.3.1.7.4. The dimensions of the placards to be affixed to wagons may be reduced to 150 mm x 150 mm. In this case, the other dimensions prescribed for the trefoil, lines, figures and letters do not apply.

5.3.2. *Orange-coloured plate marking*

5.3.2.1. General orange-coloured plate marking provisions

5.3.2.1.1. A rectangular, orange-coloured marking conforming to 5.3.2.2.1 shall be affixed on each side of a:

— tank wagon,

— battery wagon,

— wagon with demountable tanks,

— tank-container,

— MEGC,

— portable tank,

— wagon for carriage in bulk,

— small or large container for carriage in bulk

used for the carriage of goods for which a hazard identification number is given in column (20) of Table A of Chapter 3.2.

This marking may also be affixed on both sides of wagon loads made up of packages containing one and the same substance.

5.3.2.1.2. These orange-coloured plates shall bear the hazard identification number and the UN number, in accordance with 5.3.2.2.2, prescribed respectively in columns (20) and (1) of Table A of Chapter 3.2 for the substance carried.

5.3.2.1.3. When a number of different substances are carried in a tank wagon, battery-wagon, wagon with demountable tank, tank-container, MEGC or portable tank in separate tanks or separate compartments of the same tank, the consignor shall affix the orange-coloured marking as required in 5.3.2.1.1, bearing the appropriate numbers, on each side of the tanks or tank compartments, parallel to the longitudinal axis of the wagon, tank-container or portable tank and so as to be clearly visible.

5.3.2.1.4. The requirements of 5.3.2.1.1 to 5.3.2.1.3 shall be valid also for empty tank wagons, battery-wagons, wagons with demountable tanks, tank-containers, MEGCs or portable tanks which have not been cleaned, degassed or decontaminated and for empty wagons, large containers and small containers for bulk goods which have not been cleaned or degassed. Once the dangerous substances have been unloaded and the tanks cleaned, degassed or decontaminated, the orange markings shall no longer be visible.

5.3.2.2. Specifications for the orange-coloured plates

5.3.2.2.1 The orange-coloured plates shall be of 40 cm base and not less than 30 cm high; they shall have a black border not more than 15 mm wide.

NOTE. The orange colour of the marking, in conditions of normal use, should have chromaticity coordinates lying within the area on the chromaticity diagram formed by joining the following coordinates

Chromaticity coordinates of points at the corners of the area on the chromaticity diagram				
x	0,52	0,52	0,578	0,618
y	0,38	0,40	0,422	0,38

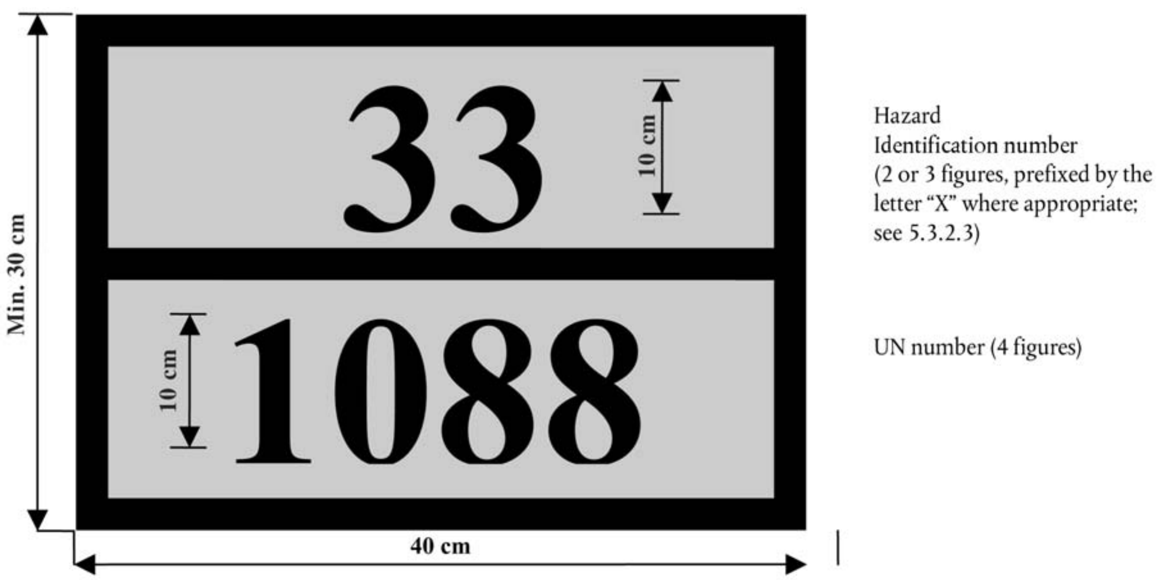
Luminance factor of non-reflectorized colour: β ≥ 0,22

Luminance factor of reflectorized colour: β > 0,12

Reference centre E, Standard Illuminant C, normal incidence 45° and viewed at 0°.

5.3.2.2.2. The hazard identification number and the UN number shall consist of black digits 100 mm high and of 15 mm stroke thickness. The UN number shall be inscribed in the lower part of the plate and the hazard-identification number in the upper part; they shall be separated by a horizontal black line, 15 mm in stroke width, extending from side to side of the plate at mid-height (see 5.3.2.2.3).

5.3.2.2.3. Example of orange-coloured plate with hazard identification number and UN number



Background orange.
Border, horizontal line and figures black, 15 mm thickness.

5.3.2.3. Meaning of hazard identification numbers

5.3.2.3.1. The hazard identification number for Classes 2 to 9 consists of two or three figures. In general, the figures indicate the following hazards:

2 Emission of gas due to pressure or to chemical reaction

3 Flammability of liquids (vapours) and gases or self-heating liquid

4 Flammability of solids or self-heating solid

5 Oxidizing (fire-intensifying) effect

6 Toxicity or risk of infection

7 Radioactivity

8 Corrosivity

9 Risk of spontaneous violent reaction

NOTE. The risk of spontaneous violent reaction within the meaning of figure 9 includes the possibility following from the nature of a substance of a risk of explosion, disintegration or polymerization reaction following the release of considerable heat or flammable and/or toxic gases.

Doubling of a figure indicates an intensification of that particular hazard.

Where the hazard associated with a substance can be adequately indicated by a single figure, this is followed by zero.

The following combinations of figures, however, have a special meaning: 22, 323, 333, 362, 382, 423, 44, 446, 462, 482, 539, 606, 623, 642, 823, 842, 90 and 99 (see 5.3.2.3.2).

For substances and articles of Class 1, the classification code in accordance with column (3b) of Table A of Chapter 3.2 shall be used as the hazard identification number. The classification code consists of:

— the division number in accordance with 2.2.1.1.5 and

— the compatibility group letter in accordance with 2.2.1.1.6.

5.3.2.3.2. The hazard identification numbers listed in column (20) of Table A of Chapter 3.2 have the following meanings:

20 asphyxiant gas or gas with no subsidiary risk

22 refrigerated liquefied gas, asphyxiant

223 refrigerated liquefied gas, flammable

225 refrigerated liquefied gas, oxidizing (fire-intensifying)

23 flammable gas

239 flammable gas, which can spontaneously lead to violent reaction

25 oxidizing (fire-intensifying) gas

26 toxic gas

263 toxic gas, flammable

265 toxic gas, oxidizing (fire-intensifying)

268 toxic gas, corrosive

30 30 flammable liquid (flash-point between 23 °C and 61 °C, inclusive) or flammable liquid or solid in the molten state with a flash-point above 61 °C, heated to a temperature equal to or above its flash-point, or self-heating liquid

323 flammable liquid which reacts with water, emitting flammable gases

X323 flammable liquid which reacts dangerously with water, emitting flammable gases ([1])

33 highly flammable liquid (flash-point below 23 °C)

333 pyrophoric liquid

X333 pyrophoric liquid which reacts dangerously with water ([1])

336	highly flammable liquid, toxic
338	highly flammable liquid, corrosive
X338	highly flammable liquid, corrosive, which reacts dangerously with water ([1])
339	highly flammable liquid which can spontaneously lead to violent reaction
36	flammable liquid (flash-point between 23 °C and 61 °C inclusive), slightly toxic, or self-heating liquid, toxic
362	flammable liquid, toxic, which reacts with water, emitting flammable gases
X362	flammable liquid toxic, which reacts dangerously with water, emitting flammable gases ([1])
368	flammable liquid, toxic, corrosive
38	flammable liquid (flash-point between 23 °C and 61 °C, inclusive), slightly corrosive or self-heating liquid, corrosive
382	flammable liquid, corrosive, which reacts with water, emitting flammable gases
X382	flammable liquid, corrosive, which reacts dangerously with water, emitting flammable gases ([1])
39	flammable liquid, which can spontaneously lead to violent reaction
40	flammable solid, or self-reactive substance, or self-heating substance
423	solid which reacts with water, emitting flammable gases
X423	flammable solid which reacts dangerously with water, emitting flammable gases ([1])
43	spontaneously flammable (pyrophoric) solid
44	flammable solid, in the molten state at an elevated temperature
446	flammable solid, toxic, in the molten state, at an elevated temperature
46	flammable or self-heating solid, toxic
462	toxic solid which reacts with water, emitting flammable gases
X462	solid, which reacts dangerously with water, emitting toxic gases ([1])
48	flammable or self-heating solid, corrosive
482	corrosive solid, which reacts with water, emitting flammable gases
X482	solid, which reacts dangerously with water, emitting corrosive gases ([1])
50	oxidizing (fire-intensifying) substance
539	flammable organic peroxide
55	strongly oxidizing (fire-intensifying) substance
556	strongly oxidizing (fire-intensifying) substance, toxic
558	strongly oxidizing (fire-intensifying) substance, corrosive
559	strongly oxidizing (fire-intensifying) substance, which can spontaneously lead to violent reaction
56	oxidizing substance (fire-intensifying), toxic
568	oxidizing substance (fire-intensifying), toxic, corrosive
58	oxidizing substance (fire-intensifying), corrosive
59	oxidizing substance (fire-intensifying) which can spontaneously lead to violent reaction
60	toxic or slightly toxic substance

606 infectious substance

623 toxic liquid, which reacts with water, emitting flammable gases

63 toxic substance, flammable (flash-point between 23 °C and 61 °C inclusive)

638 toxic substance, flammable (flash-point between 23 °C and 61 °C inclusive), corrosive

639 toxic substance, flammable (flash-point not above 61 °C) which can spontaneously lead to violent reaction

64 toxic solid, flammable or self-heating

642 toxic solid, which reacts with water, emitting flammable gases

65 toxic substance, oxidizing (fire-intensifying)

66 highly toxic substance

663 highly toxic substance, flammable (flash-point not above 61 °C)

664 highly toxic solid, flammable or self-heating

665 highly toxic substance, oxidizing (fire-intensifying)

668 highly toxic substance, corrosive

669 highly toxic substance which can spontaneously lead to violent reaction

68 toxic substance, corrosive

69 toxic or slightly toxic substance, which can spontaneously lead to violent reaction

70 radioactive material

72 radioactive gas

723 radioactive gas, flammable

73 radioactive liquid, flammable (flash-point not above 61 °C)

74 radioactive solid, flammable

75 radioactive material, oxidizing (fire-intensifying)

76 radioactive material, toxic

78 radioactive material, corrosive

80 corrosive or slightly corrosive substance

X80 corrosive or slightly corrosive substance, which reacts dangerously with water ([1])

823 corrosive liquid which reacts with water, emitting flammable gases

83 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive)

X83 corrosive or slightly corrosive substance, flammable, (flash-point between 23 °C and 61 °C inclusive), which reacts dangerously with water ([1])

839 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive) which can spontaneously lead to violent reaction

X839 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive), which can spontaneously lead to violent reaction and which reacts dangerously with water ([1])

84 corrosive solid, flammable or self-heating

842 corrosive solid which reacts with water, emitting flammable gases

85 corrosive or slightly corrosive substance, oxidizing (fire-intensifying)

856 corrosive or slightly corrosive substance, oxidizing (fire-intensifying) and toxic

86 corrosive or slightly corrosive substance, toxic

88 highly corrosive substance

X88 highly corrosive substance, which reacts dangerously with water [1]

883 highly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive)

884 highly corrosive solid, flammable or self-heating

885 highly corrosive substance, oxidizing (fire-intensifying)

886 highly corrosive substance, toxic

X886 highly corrosive substance, toxic, which reacts dangerously with water [1]

89 corrosive or slightly corrosive substance, which can spontaneously lead to violent reaction

90 environmentally hazardous substance; miscellaneous dangerous substances

99 miscellaneous dangerous substance carried at an elevated temperature.

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[1] Water not to be used except by approval of experts.

5.3.3. *Mark for elevated temperature substances*

Tank-wagons, tank-containers, portable tanks, special wagons or large containers or specially equipped wagons or large containers for which a mark for elevated temperature substances is required according to special provision 580 in column (6) of Table A of Chapter 3.2 shall, in the case of wagons, bear on both sides and, in the case of large containers, tank-containers and portable tanks, bear on all four sides a triangular shaped mark with sides of at least 250 mm, to be shown in red, as reproduced below.

5.3.4. *Shunting labels conforming to models 13 and 15*

5.3.4.1. General provisions

The general provisions of 5.3.1.1.1 and 5.3.1.1.5 and of 5.3.1.3 to 5.3.1.6 shall also apply to the shunting labels conforming to models Nos. 13 and 15.

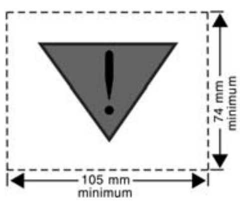
Instead of the shunting labels, indelible marking corresponding exactly to the prescribed models may be affixed. This may simply consist of the red triangle with a black exclamation mark (at least 100 mm base by 70 mm height).

5.3.4.2. Description of shunting labels conforming to Models 13 and 15

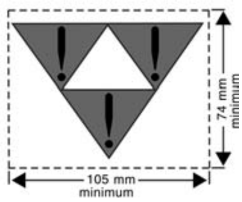
The shunting labels conforming to Models 13 and 15 shall have the shape of a rectangle not smaller than A7 format (74 mm × 105 mm).

shunt with care
red triangle with an exclamation mark in black black on white background

No. 13



No. 15



loose shunting or hump shunting forbidden. Shall be accompanied by a motive power unit. Shall not bump, or be bumped by, other wagons.
three triangles, red, with black exclamation mark

5.3.5. *Orange band*

Tank wagons intended for the carriage of liquefied or refrigerated liquefied gases shall be marked with an unbroken, orange ([1]), non-reflectorized band, about 30 cm wide, encircling the shell at mid-height.

CHAPTER 5.4

Documentation

5.4.0. Any carriage of goods governed by this Directive shall be accompanied by the documentation prescribed in this chapter, as appropriate, unless exempted under 1.1.3.1 to 1.1.3.5.

NOTE. The use of electronic data processing (EDP) or electronic data interchange (EDI) techniques as an aid to or instead of paper documentation is permitted, provided that the procedures used for the capture, storage and processing of electronics data meet the legal requirements as regards the evidential value and availability of data during transport in a manner at least equivalent to that of paper documentation.

5.4.1. *Dangerous goods consignment note and information connected with it*

5.4.1.1. General information required in the consignment note

5.4.1.1.1. Next to the cross to be entered in the appropriate box, the consignment note(s) shall contain the following information for each dangerous substance, material or article handed over for carriage:

(a) the UN number;

(b) the proper shipping name supplemented, when applicable (see 3.1.2.6), with the technical, chemical or biological name, as determined in accordance with 3.1.2;

(c) the class of the goods, or for substances and articles of Class 1 the division, followed immediately by the compatibility group letter;

(d) where assigned, the packing group for the substance or article;

(e) the initials RID;

(f) to (j) (reserved)

(k) when a marking in accordance with 5.3.2.1 is prescribed, the hazard identification number shall also be inscribed before the UN number.

The location and order of the information required in the consignment note is optional, except that (k), (a), (b), (c), (d) and (e) shall appear in that sequence, e.g.

The hazard identification number shall also be shown when wagon loads made up of packages containing one and the same substance bear a marking in accordance with 5.3.2.1.

5.4.1.1.2. The information required on a consignment note shall be legible.

5.4.1.1.3. Special provisions for wastes

If waste containing dangerous goods (other than radioactive wastes) is being carried, the UN number and the proper shipping name shall be preceded by the word ‘WASTE’, provided this is not already part of the proper shipping name, e.g. ‘Waste, 1230 methanol’ 3, II, RID" or ‘Waste, 1993 flammable liquid, n.o.s. (toluene and ethyl alcohol) 3, II, RID’.

5.4.1.1.4. Special provisions for dangerous goods packed in limited quantities

No information is required in the consignment note for carriage of dangerous goods packed in limited quantities according to Chapter 3.4.

5.4.1.1.5. Special provisions for salvage packagings

When dangerous goods are carried in a salvage packaging, the words ‘SALVAGE PACKAGING’ shall be added after the description of the goods in the consignment note.

([1]) See 5.3.2.2.1 Note.

5.4.1.1.6. Special provisions for empty uncleaned packagings, wagons, containers, tanks, battery wagons and MEGCs

For empty means of containment, uncleaned, the description in the consignment note shall be 'EMPTY PACKAGING', 'EMPTY RECEPTACLE', 'EMPTY IBC', 'EMPTY LARGE PACKAGING', 'EMPTY DEMOUNTABLE TANK', 'EMPTY TANK WAGON', 'EMPTY BATTERY WAGON', 'EMPTY PORTABLE TANK', 'EMPTY MEGC', 'EMPTY WAGON', 'EMPTY SMALL CONTAINER, EMPTY LARGE CONTAINER' as appropriate, followed by the class number of the last contents and the letters 'RID' or 'ADR', e.g. 'EMPTY PACKAGING, 3, RID'

In the case of empty gas receptacles with a capacity of more than 1 000 litres, empty tank wagons, battery wagons, demountable tanks, portable tanks, tank-containers, MEGCs, wagons, containers for goods in bulk, uncleaned, this description shall be followed by the words 'last load' together with the hazard identification number, UN number and proper shipping name of the goods last loaded, and, where applicable, the packing group, e.g. 'EMPTY TANK WAGON, 2, RID, LAST LOAD: 268 1017 CHLORINE'

If empty uncleaned tank wagons, empty uncleaned battery wagons, empty uncleaned demountable tanks, empty uncleaned portable tanks, empty uncleaned tank-containers, empty uncleaned MEGCs, empty uncleaned wagons and empty uncleaned containers for the carriage of goods in bulk are carried to the nearest suitable place for cleaning or repair, the consignment note shall also contain the following: 'CARRIAGE IN ACCORDANCE WITH 4.3.2.4.3' or 'CARRIAGE IN ACCORDANCE WITH 7.5.8.1'

5.4.1.1.7. Special provisions for carriage prior to or following maritime or air carriage

For carriage in accordance with 1.1.4.2, a statement shall be included in the consignment note, as follows: 'Carriage in accordance with 1.1.4.2'.

5.4.1.1.8. Special provisions for use of portable tanks approved for maritime transport

For carriage in accordance with 1.1.4.3, a statement shall be included in the consignment note, as follows: 'Carriage in accordance with 1.1.4.3'.

5.4.1.1.9. Special provisions for piggyback transport

For carriage in accordance with 1.1.4.4, a statement shall be included in the consignment note, as follows : 'Carriage in accordance with 1.1.4.4'.

5.4.1.1.10. Special provisions for exemptions related to quantities carried per wagon

5.4.1.1.10.1 In the case of exemptions provided for in 1.1.3.1(c), the consignment note shall bear the following inscription: 'Load not exceeding the exemption limits prescribed in 1.1.3.1(c).'

5.4.1.1.10.2 Where consignments from more than one consignor are carried in the same wagon, the consignment notes accompanying these consignments need not bear the inscription mentioned in 5.4.1.1.10.1.

5.4.1.1.11. Special provisions for the carriage of IBCs after expiry of the date limit for the periodic test or inspection

For carriage in accordance with 4.1.2.2, a statement shall be included in the consignment note, as follows : 'Carriage in accordance with 4.1.2.2'.

5.4.1.1.12. Special provisions for carriage in accordance with transitional requirements

For carriage in accordance with 1.6.1.1, a statement shall be included in the consignment note, as follows : 'Carriage in accordance with RID in force before 1 July 2001'.

5.4.1.2. Additional or special information required for certain classes

5.4.1.2.1. Special provisions for Class 1

(a) In addition to the information in accordance with 5.4.1.1.1, the consignment note shall indicate the net mass in kg of explosive substance. For wagon loads or full wagon loads, the consignment note shall indicate the number of packages, the mass of each package in kg and the total net mass in kg of explosive substance;

(b) For mixed packing of two different goods, the description of the goods in the consignment note shall include the UN numbers and proper shipping names printed in capitals in columns (1) and (2) of Table A of Chapter 3.2 of both substances or articles. If more than two different goods are contained in the same package in accordance with 4.1.10, special provisions MP1, MP2 and MP20 to MP24, the consignment note shall indicate under the description of the goods the UN numbers of all the substances and articles contained in the package, in the form, 'Goods of UN Nos …';

(c) For the carriage of substances and articles assigned to an n.o.s. entry or the entry '0190 Samples, explosive' or packed conforming to Packing Instruction P101 of 4.1.4.1, a copy of the competent authority approval with the conditions of carriage shall be attached to the consignment note. It shall be in an official language of the forwarding country and also, if that language is not French, German, Italian or English, in French, German, Italian or English, unless international tariffs or agreements between the railways provide otherwise;

(d) If packages containing substances and articles of compatibility groups B and D are loaded together in the same wagon in accordance with the requirements of 7.5.2.2, the approval certificate of the protective container/separate compartment in accordance with 7.5.2.2, footnote 1/, shall be attached to the consignment note;

(e) When explosive substances or articles are carried in packagings conforming to Packing Instruction P101, the consignment note shall bear the inscription 'Packaging approved by the competent authority of (indication of the state (distinguishing sign of the states for motor vehicles in international traffic)), on whose behalf the competent authority is acting.'

(f) In the case of military consignments within the meaning of 1.5.2, the descriptions prescribed by the competent military authority may be used in place of the descriptions in accordance with Table A of Chapter 3.2.

For the carriage of military consignments to which the derogations in accordance with 5.2.1.5, 5.2.2.1.8 and 5.3.1.1.2 and in 7.2.4, special provision W2, the following shall be entered in the consignment note: 'Military consignment'.

NOTE. The commercial or technical name of the goods may be entered additionally to the proper shipping name in the consignment note.

5.4.1.2.2. Additional provisions for Class 2

(a) For the carriage of mixtures (see 2.2.2.1.1) in tank wagons, battery wagons, wagons with demountable tanks, portable tanks, tank-containers or MEGCs, the composition of the mixture as a percentage of the volume or as a percentage of the mass shall be given. Constituents below 1 % need not be indicated (see also 3.1.2.6.1.2);

(b) For the carriage of cylinders, tubes, pressure drums, cryogenic receptacles and bundles of cylinders under the conditions of 4.1.6.6, the following entry shall be included in the consignment note: 'Carriage in conformity with 4.1.6.6'.

(c) Where tank wagons have been refilled without having been previously cleaned out, the consignment note shall show, as total weight of goods carried, the sum of the weight of the new load and of the residual load, which will be the same as the gross weight of the tank wagon, less its registered unladen weight. In addition, the words 'Mass when filled ... kg' may also be added.

(d) In the case of tank wagons and tank-containers containing gases, the consignor shall enter in the consignment note: 'The tank is guaranteed as insulated in order that the valves cannot open before … (date accepted by the railway)'.

5.4.1.2.3. Additional provisions for self-reactive substances of Class 4.1 and organic peroxides of Class 5.2

5.4.1.2.3.1. (Reserved)

5.4.1.2.3.2. When for certain self-reactive substances of Class 4.1 and certain organic peroxides of Class 5.2 the competent authority has permitted the label conforming to model No. 1 to be dispensed with for a specific packaging (see 5.2.2.1.9), a statement to this effect shall be included in the consignment note, as follows: 'The label conforming to model No. 1 is not required'.

5.4.1.2.3.3. When organic peroxides and self-reactive substances are carried under conditions where approval is required (for organic peroxides see 2.2.52.1.8 and 4.1.7.2.2 and TA2 of 6.8.4; for self-reactive substances see 2.2.41.1.13 and 4.1.7.2.2.), a statement to this effect shall be included in the consignment note, e.g. 'Carriage in accordance with 2.2.52.1.8'.

A copy of the approval of the competent authority with the conditions of carriage shall be attached to the consignment note.

5.4.1.2.3.4. When a sample of an organic peroxide (see 2.2.52.1.9) or a self-reactive substance (see 2.2.41.1.15) is carried, a statement to this effect shall be included in the consignment note, e.g. 'Carriage in accordance with 2.2.52.1.9'.

5.4.1.2.3.5. When self-reactive substances type G (see Manual of Tests and Criteria, Part II, paragraph 20.4.2(g)) are carried, the following statement may be given in the consignment note: 'Not a self-reactive substance of Class 4.1'.

When organic peroxides type G (see Manual of Tests and Criteria, Part II, paragraph 20.4.3(g)) are carried, the following statement may be given in the consignment note: 'Not a substance of Class 5.2'.

5.4.1.2.4. Additional provisions for Class 6.2

(a) If the infectious substance is a genetically modified substance, the words 'genetically modified micro-organisms' shall be added in the consignment note;

(b) For diagnostic specimens which are handed over for carriage under the conditions of 2.2.62.1.8, the proper shipping name shall be: 'Diagnostic specimen, containing …' (the infectious substance determining the classification to be entered)

5.4.1.2.5. Special provisions for Class 7

5.4.1.2.5.1. The consignor shall include in the consignment note with each consignment the following information, as applicable, in the order given:

(a) The UN number assigned to the material preceded by the letters 'UN';

(b) The proper shipping name;

(c) The Class number '7';

(d) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;

(e) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;

(f) The maximum activity of the radioactive contents during carriage expressed in becquerels (Bq) with an appropriate SI prefix (see 1.2.2.1). For fissile material, the mass of fissile material in grams (g), or appropriate multiples thereof, may be used in place of activity;

(g) The category of the package, i.e. I-WHITE, II-YELLOW, III-YELLOW;

(h) The transport index (categories II-YELLOW and III-YELLOW only);

(i) For consignments including fissile material other than consignments excepted under 6.4.11.2, the criticality safety index;

(j) The identification mark for each competent authority approval certificate (special form radioactive material, low dispersible radioactive material, special arrangement, package design, or shipment) applicable to the consignment;

(k) For consignments of packages in an overpack or container, a detailed statement of the contents of each package within the overpack or container and, where appropriate, of each overpack or container in the consignment. If packages are to be removed from the overpack or container at a point of intermediate unloading, appropriate consignment notes shall be made available;

(l) Where a consignment is required to be shipped under exclusive use, the statement 'EXCLUSIVE USE SHIPMENT';

(m) For LSA-II, LSA-III, SCO-I and SCO-II, the total activity of the consignment as a multiple of A_2.

5.4.1.2.5.2. The consignor shall provide in the consignment note a statement regarding actions, if any, that are required to be taken by the carrier. The statement shall be in the languages deemed necessary by the carrier or the authorities concerned, and shall include at least the following information:

(a) Supplementary requirements for loading, stowage, carriage, handling and unloading of the package, overpack or container including any special stowage provisions for the safe dissipation of heat (see provision CW33 (3.2) of 7.5.11), or a statement that no such requirements are necessary;

(b) Restrictions on the mode of transport or wagon and any necessary routeing instructions;

(c) Emergency arrangements appropriate to the consignment.

5.4.1.2.5.3. The applicable competent authority certificates need not necessarily accompany the consignment. The consignor shall make them available to the carrier(s) before loading and unloading.

5.4.1.3. (Reserved)

5.4.1.4. Format and language to be used

5.4.1.4.1. The tariffs applicable at the forwarding station shall determine the language in which the particulars to be filled in by the consignor in the consignment note shall be entered. In the absence of such provisions, they shall be entered in one of the official languages of the State of departure and a translation in French or German shall be added unless the particulars have been entered in one of those languages.

5.4.1.4.2. A separate consignment note shall be made out for consignments which, because of the prohibitions in 7.5.2, may not be loaded together in the same wagon or container. In addition to the consignment note, for multimodal carriage, the use of documents corresponding to the example shown in 5.4.4 is considered advisable ([1]).

5.4.1.5. Non-dangerous goods

When goods mentioned by name in Table A of Chapter 3.2, are not subject to this Directive because they are considered as non-dangerous according to Part 2, the consignor may enter in the consignment note a statement to that effect, e.g. 'Not goods of Class …'

NOTE. This provision may be used in particular when the consignor considers that, due to the chemical nature of the goods (e.g. solutions and mixtures) carried or to the fact that such goods are deemed dangerous in accordance with other regulations the consignment might be subject to control during the journey.

5.4.2. *Container packing certificate*

If the carriage of dangerous goods in a large container precedes a voyage by sea, a container packing certificate conforming to section 5.4.2 of the IMDG Code ([2]) shall be provided with the consignment note ([3]).

5.4.3. (Reserved)

5.4.4. *Example of a form for the multimodal carriage of dangerous goods*

Example of a form which may be used as a combined dangerous goods declaration and container packing certificate for multimodal carriage of dangerous goods.

([1]) When using this document, the relevant recommendations of the UN/ECE Working Group on Facilitation of International Trade Procedures may be consulted, in particular Recommendation No. 1 (United Nations Lay-out Key for Trade Documents) (ECE/TRADE/137, edition 96.1), Recommendation No. 11 (Documentary Aspects of the International Transport of Dangerous Goods) ECE/TRADE/204, edition 96.1) and Recommendation No. 22 (Lay-out Key for standard Consignment Instructions) (ECE/TRADE/168, edition 96.1). Refer to the Trade Data Elements Directory, Volume III, Trade Facilitation Recommendations (ECE/TRADE/200) (United Nations publication Sales No.E/F.96.II.E.13).

([2]) Guidelines for use in practice and in training for loading goods in transport units have also been drawn up by the International Maritime Organization (IMO), the International Labour Organization (ILO) and the United Nations Economic Commission for Europe (UN/ECE) and have been published by IMO '(IMO/ILO/UNECE Guidelines for Packing of Cargo Transport Units (CTUs)').

([3]) Section 5.4.2 of the IMDG Code requires the following:

'5.4.2. *Container/vehicle packing certificate*

5.4.2.1. When packages containing dangerous goods are packed onto or into any unit, such as, freight container, flat, trailer or other vehicle intended for transport by sea, those responsible for the packing of the unit shall provide a "container/vehicle packing certificate" specifying the container/vehicle/unit identification number(s) and certifying that the operation has been carried out in accordance with the following conditions:

1. The cargo transport unit was clean, dry and apparently fit to receive the goods;
2. If the consignments include goods of Class 1, other than Division 1.4, the cargo transport unit is structurally serviceable in conformity with 7.4.10 (of the IMDG Code).
3. Goods, which should be segregated, have not been packed together onto or in the cargo transport unit (unless approved by the competent authority concerned in accordance with 7.2.2.3 (of the IMDG Code);
4. All packages have been externally inspected for damage, leakage or sifting, and only sound packages have been loaded;
5. Drums have been stowed in an upright position, unless otherwise authorized by the competent authority;
6. All packages have been properly packed onto or in the cargo transport unit and secured;
7. When dangerous goods are transported in bulk packagings, the cargo has been evenly distributed;
8. The cargo transport unit and the packages therein are properly marked, labelled, and placarded;
9. When solid carbon dioxide (CO2-dry ice) is used for cooling purposes, the cargo transport unit is externally marked or labelled in a conspicuous place, such as, at the door end, with the words: DANGEROUS CO2 GAS (DRY ICE) INSIDE. VENTILATE THOROUGHLY BEFORE ENTERING,
10. The dangerous goods transport document required in 5.4.1 (of the IMDG Code) has been received for each dangerous goods consignment packed onto or in the cargo transport unit.

5.4.2.2. The functions of the dangerous goods transport document required in 5.4.1 (of the IMDG Code) and of the container/vehicle packing certificate required in 5.4.2.1 (of the IMDG Code) may be incorporated into a single document; if not, these documents shall be attached one to the other. If these functions are incorporated into a single document, such as, a dangerous goods declaration, a shipping note, etc., the inclusion of a signed declaration phrase such as "It is declared that the packing of the goods into the unit has been carried out in accordance with the provisions of 5.4.2.1" will suffice. The person signing this declaration shall be identified on the document.

NOTE. The container packing certificate or vehicle declaration is not required for tanks.'

MULTIMODAL DANGEROUS GOODS FORM

1. Shipper/Consignor/Sender	2. Transport document number			
	3. Page 1 of pages	4. Shipper's reference		
		5. Freight forwarder's reference		
6. Consignee	7. Carrier (to be completed by the carrier)			
	SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national governmental regulations.			
8. This shipment is within the limitations prescribed for: (Delete non-applicable)	9. Additional handling information			
PASSENGER AND CARGO AIRCRAFT / CARGO AIRCRAFT ONLY				
10. Vessel / flight No and date / 11. Port / place of loading				
12. Port / place of discharge / 13. Destination				
14. Shipping marks	(*) Number and kind of packages; description of goods	Gross mass (kg)	Net mass	Cube (m^3)
15. Container identification No / vehicle registration No	16. Seal number(s)	17. Container/vehicle size and type	18. Tare (kg)	19. Total gross mass (including tare) (kg)

CONTAINER/VEHICLE PACKING CERTIFICATE I hereby declare that the goods described above have been packed/loaded into the container/vehicle identified above in accordance with the applicable provisions (**) MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING	21. RECEIVING ORGANISATION RECEIPT Received the above number of packages/containers/trailers in apparent good order and condition unless stated hereon: RECEIVING ORGANISATION REMARKS:	
20. Name of company	Haulier's name	22. Name of company (OF SHIPPER PREPARING THIS NOTE)
Name / Status of declarant	Vehicle registration No	Name / Status of declarant
Place and date	Signature and date	Place and date
Signature of declarant	DRIVER'S SIGNATURE	Signature of declarant

(*) FOR DANGEROUS GOODS you must specify proper shipping name, hazard class, UN No. packing group (where assigned) and any other element of information required under applicable national and international regulators.

(**) For the purposes of the Regulation see pararaph 5.4.2.1.

MULTIMODAL DANGEROUS GOODS FORM **Continuation Sheet**

1. Shipper/Consignor/Sender	2. Transport document number	
	3. Page 2 of pages	4. Shipper's reference
		5. Freight forwarder's reference

14. Shipping marks	(*) Number and kind of packages; description of goods	Gross mass (kg)	Net mass	Cube (m^3)

(*) FOR DANGEROUS GOODS you must specify proper shipping name, hazard class, UN No. packing group (where assigned) and any other element of information required under applicable national and international regulators.

CHAPTER 5.5

Special Requirements

5.5.1. *Special requirements for the consignment of infectious substances*

5.5.1.1. Unless an infectious substance cannot be consigned by any other means, live vertebrate or invertebrate animals shall not be used to consign such a substance. Such animals shall be packed, marked, labelled and carried in accordance with the relevant regulations governing the carriage of animals ([1]).

5.5.1.2. The carriage of infectious substances of risk groups 3 and 4 requires coordinated action by the consignor, the carrier and the consignee to ensure safety and arrival on time and in proper condition. To this end, the following measures shall be taken:

(a) *Advance arrangements between consignor, carrier and consignee*. Dispatch of infectious substances shall not take place before advance arrangements have been made between consignor, carrier and consignee or before the consignee has confirmed with his competent authorities that the substances can legally be imported and that no delay will be incurred in the delivery of the consignment to its destination;

(b) *Preparation of dispatch documents*. In order to secure transmission without hindrance it is necessary to prepare all dispatch documents, including the consignment note (see Chapter 5.4), in strict accordance with rules governing the acceptance of the goods to be dispatched;

(c) *Routeing*. Whatever the mode used, transport shall be by the quickest possible routeing. If transshipment is necessary, precautions shall be taken to ensure special care, expeditious handling and monitoring of the substances in transit;

(d) *Timely notification of all transport data by consignor to consignee*. The consignor shall notify the consignee in advance of transport details, such as: means of transport, train number(s), consignment note number and date and hour of expected arrival at the point of destination, so that the consignment can be collected promptly. The most rapid means of communication shall be used for this notification.

5.5.1.3. Dead animals which are known or reasonably believed to contain an infectious substance shall be packed, marked, labelled and carried in accordance with the conditions ([2]) specified by the competent authority of the country of origin ([3]).

5.5.2. *Special requirements for fumigated wagons or containers*

5.5.2.1. Consignment notes associated with containers and wagons that have been fumigated shall show the date of fumigation and the type and amount of the fumigant used. In addition, instructions for disposal of any residual fumigant including fumigation devices (if used) shall be provided.

These instructions shall be in an official language of the forwarding country and, if this language is not French, German, Italian or English, in French, German, Italian or English, unless international tariffs or agreements between the railways provide otherwise.

([1]) Regulations governing the carriage of live animals are contained in, e.g. Directive 91/628/EEC of 19 November 1991 (Official Journal of the European Communities OJ L 340 of 11.12.1991, p. 17) and in the Recommendations of the Council of Europe (Ministerial Committee) on the carriage of certain animal species.

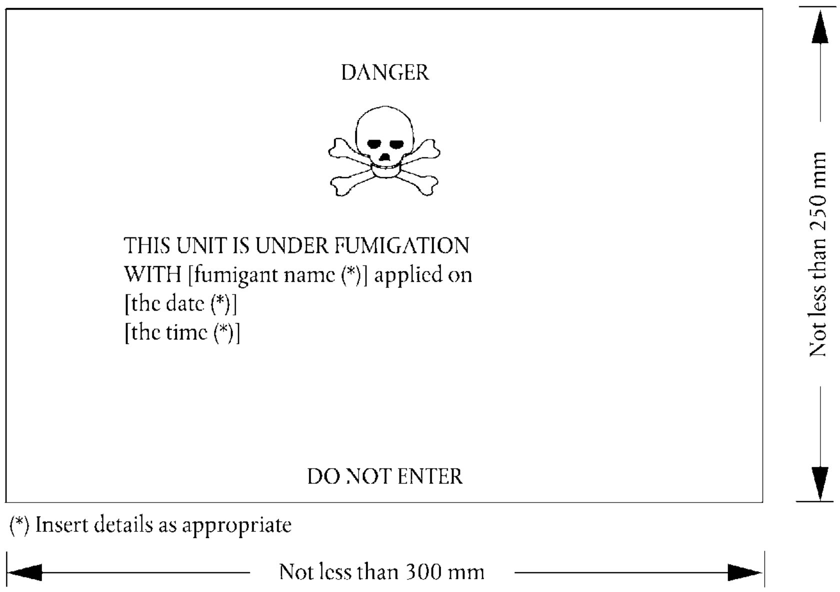
([2]) Such regulations are contained e.g. in the Official Journal of the European Communities Directive 90/667/EEC of 27 November 1990, laying down the veterinary rules for the disposal and processing of animal waste, for its placing on the market and for the prevention of pathogens in feedstuffs of animal or fish origin and amending Directive 90/425/EEC.

([3]) If the country of origin is not a Contracting State, the competent authority of the first Contracting State reached by the consignment.

5.5.2.2. A warning sign as specified in the figure below shall be placed on each fumigated container or wagon in a location where it will be easily seen by persons attempting to enter the interior of the container or wagon.

The information on the warning sign shall be in a language the consignor considers suitable.

Fumigation warning sign



Part 6

REQUIREMENTS FOR THE CONSTRUCTION AND TESTING OF PACKAGINGS, INTERMEDIATE BULK CONTAINERS (IBCS), LARGE PACKAGINGS AND TANKS

CHAPTER 6.1

Requirements for the construction and testing of packagings

6.1.1. *General*

6.1.1.1. The requirements of this Chapter do not apply to:

(a) packages containing radioactive material of Class 7, unless otherwise provided (see 4.1.9.1.5);

(b) packages containing infectious substances of Class 6.2, unless otherwise provided (see 4.1.8.2);

(c) receptacles containing gases of Class 2;

(d) packages whose net mass exceeds 400 kg;

(e) packagings with a capacity exceeding 450 litres.

6.1.1.2. The requirements in 6.1.4 are based on packagings currently used. In order to take into account progress in science and technology, there is no objection to the use of packagings having specifications different from those in 6.1.4, provided that they are equally effective, acceptable to the competent authority and able successfully to withstand the tests described in 6.1.1.3 and 6.1.5. Methods of testing other than those described in this Chapter are acceptable, provided they are equivalent, and are recognized by the competent authority.

6.1.1.3. Every packaging intended to contain liquids shall successfully undergo a suitable leakproofness test, and be capable of meeting the appropriate test level indicated in 6.1.5.4.3:

(a) before it is first used for carriage;

(b) after remanufacturing or reconditioning, before it is re-used for carriage;

For this test, packagings need not have their own closures fitted.

The inner receptacle of composite packagings may be tested without the outer packaging provided the test results are not affected.

This test is not necessary for:

— inner packagings of combination packagings;

— inner receptacles of composite packagings (glass, porcelain or stoneware), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a)(ii);

— light gauge metal packagings, marked with the symbol 'RID/ADR' according to 6.1.3.1 (a)(ii).

6.1.1.4. Packagings shall be manufactured and tested under a quality assurance programme which satisfies the competent authority in order to ensure that each manufactured packaging meets the requirements of this Chapter.

6.1.2. *Code for designating types of packagings*

6.1.2.1. The code consists of:

(a) an Arabic numeral indicating the kind of packaging, e.g. drum, jerrican, etc., followed by;

(b) a capital letter(s) in Latin characters indicating the nature of the material, e.g. steel, wood, etc., followed where necessary by;

(c) an Arabic numeral indicating the category of packaging within the kind to which the packaging belongs.

6.1.2.2. In the case of composite packagings, two capital letters in Latin characters are used in sequence in the second position of the code. The first indicates the material of the inner receptacle and the second that of the outer packaging.

6.1.2.3. In the case of combination packagings and infectious substances packagings marked in accordance with 6.3.1.1, only the code number for the outer packaging is used.

6.1.2.4. The letters 'T', 'V' or 'W' may follow the packaging code. The letter 'T' signifies a salvage packaging conforming to the requirements of 6.1.5.1.11. The letter 'V' signifies a special packaging conforming to the requirements of 6.1.5.1.7. The letter 'W' signifies that the packaging, although of the same type indicated by the code, is manufactured to a specification different to that in 6.1.4 and is considered equivalent under the requirements of 6.1.1.2.

6.1.2.5. The following numerals shall be used for the kinds of packaging:

1. Drum

2. Wooden barrel

3. Jerrican

4. Box

5. Bag

6. Composite packaging

7. (reserved)

0. Light gauge metal packaging

6.1.2.6. The following capital letters shall be used for the types of material:

A. Steel (all types and surface treatments)

B. Aluminium

C. Natural wood

D. Plywood

F. Reconstituted wood

G. Fibreboard

H. Plastics material

L. Textile

M. Paper, multiwall

N. Metal (other than steel or aluminium)

P. Glass, porcelain or stoneware

6.1.2.7. The following table indicates the codes to be used for designating types of packagings depending on the kind of packagings, the material used for their construction and their category; it also refers to the sub-sections to be consulted for the appropriate requirements:

Kind	Material	Category	Code	Subsection
1. Drums	A. Steel	non-removable head	1A1	6.1.4.1
		removable head	1A2	
	B. Aluminium	non-removable head	1B1	6.1.4.2
		removable head	1B2	
	D. Plywood		1D	6.1.4.5
	G. Fibreboard		1G	6.1.4.7
	H. Plastics	non-removable head	1H1	6.1.4.8
		removable head	1H2	
	N. Metal, other than steel or aluminium	non-removable head	N1	6.1.4.3
		removable head	N2	

Kind	Material	Category	Code	Subsection
2. Barrels	C. Wooden	bung type	2C1	6.1.4.6
		removable head	2C2	
3. Jerricans	A. Steel	non-removable head	3A1	6.1.4.4
		removable head	3A2	
	B. Aluminium	non-removable head	3B1	6.1.4.4
		removable head	3B2	
	H. Plastics	non-removable head	3H1	6.1.4.8
		removable head	3H2	
4. Boxes	A. Steel		4A	6.1.4.14
	B. Aluminium		4B	6.1.4.14
	C. Natural wood	ordinary	4C1	6.1.4.9
		with sift-proof walls	4C2	
	D. Plywood		4D	6.1.4.10
	F. Reconstituted wood		4F	6.1.4.11
	G. Fibreboard		4G	6.1.4.12
	H. Plastics	expanded	4H1	6.1.4.13
		rigid	4H2	
5. Bags	H. Woven plastics	without inner liner or coating	5H1	6.1.4.16
		sift-proof	5H2	
		water resistant	5H3	
	H. Plastics film		5H4	6.1.4.17
	L. Textile	without inner liner or coating	5L1	6.1.4.15
		sift-proof	5L2	
		water resistant	5L3	
	M. Paper	multiwall	5M1	6.1.4.18
		multiwall, water resistant	5M2	

Kind	Material	Category	Code	Subsection
6. Composite packagings	H. Plastics receptacle	with outer steel drum	6HA1	6.1.4.19
		with outer steel crate or box	6HA2	6.1.4.19
		with outer aluminium drum	6HB1	6.1.4.19
		with outer aluminium crate or box	6HB2	6.1.4.19
		with outer wooden box	6HC	6.1.4.19
		with outer plywood drum	6HD1	6.1.4.19
		with outer plywood box	6HD2	6.1.4.19
		with outer fibreboard drum	6HG1	6.1.4.19
		with outer fibreboard box	6HG2	6.1.4.19
		with outer plastics drum	6HH1	6.1.4.19
		with outer solid plastics box	6HH2	6.1.4.19
	P. Glass, porcelain or stoneware receptacle	with outer steel drum	6PA1	6.1.4.20
		with outer steel crate or box	6PA2	6.1.4.20
		with outer aluminium drum	6PB1	6.1.4.20
		with outer aluminium crate or box	6PB2	6.1.4.20
		with outer wooden box	6PC	6.1.4.20
		with outer plywood drum	6PD1	6.1.4.20
		with outer wickerwork hamper	6PD2	6.1.4.20
		with outer fibreboard drum	6PG1	6.1.4.20
		with outer fibreboard box	6PG2	6.1.4.20
		with outer expanded plastics packaging	6PH1	6.1.4.20
		with outer solid plastics packaging	6PH2	6.1.4.20
0. Light gauge metal packagings	A. Steel	non-removable head	0A1	6.1.4.22
		removable head	0A2	

6.1.3. *Marking*

NOTES:

1. The marking indicates that the packaging which bears it corresponds to a successfully tested design type and that it complies with the requirements of this Chapter which are related to the manufacture, but not to the use, of the packaging. In itself, therefore, the mark does not necessarily confirm that the packaging may be used for any substance: generally the type of packaging (e.g. steel drum), its maximum capacity and/or mass, and any special requirements are specified for each substance in Table A of Chapter 3.2.

2. The marking is intended to be of assistance to packaging manufacturers, reconditioners, packaging users, carriers and regulatory authorities. In relation to the use of a new packaging, the original marking is a means for its manufacturer(s) to identify the type and to indicate those performance test regulations that have been met.

3. The marking does not always provide full details of the test levels, etc., and these may need to be taken further into account, e.g. by reference to a test certificate, to test reports or to a register of successfully tested packagings. For example, a packaging having an X or Y marking may be used for substances to which a packing group having a lesser degree of danger has been assigned with the relevant maximum permissible value of the relative density ([1]) determined by taking into account the factor 1.5 or 2.25 indicated in the packaging test requirements in 6.1.5 as appropriate, i.e. Group I packaging tested for products of relative density 1.2 could be used as a Group II packaging for products of relative density 1.8 or a Group III packaging for products of relative density 2.7, provided of course that all the performance criteria can still be met with the higher relative density product.

([1]) Relative density (d) is considered to be synonymous with Specific Gravity (SG) and is used throughout this text.

6.1.3.1. Each packaging intended for use according to this Directive shall bear markings which are durable, legible and placed in a location and of such a size relative to the packaging as to be readily visible. For packages with a gross mass of more than 30 kg, the markings or a duplicate thereof shall appear on the top or on a side of the packaging. Letters, numerals and symbols shall be at least 12 mm high, except for packagings of 30 litres or 30 kg capacity or less, when they shall be at least 6 mm in height and for packagings of 5 litres or 5 kg or less when they shall be of an appropriate size.

The marking shall show:

(a) (i) The United Nations packaging symbol

This shall not be used for any purpose other than certifying that a packaging complies with the relevant requirements in this Chapter. For embossed metal packagings the capital letters 'UN' may be applied instead of the symbol; or

(ii) The symbol 'RID/ADR' for packagings approved for rail transport as well as road transport.

For composite packagings (glass, porcelain or stoneware) and light gauge metal packagings, conforming to simplified conditions (see 6.1.1.3, 6.1.5.3.1 (e), 6.1.5.3.4 (c), 6.1.5.4, 6.1.5.5.1 and 6.1.5.6);

(b) The code designating the type of packaging according to 6.1.2;

(c) A code in two parts:

(i) a letter designating the packing group(s) for which the design type has been successfully tested:

X for packing groups I, II and III;

Y for packing groups II and III;

Z for packing group III only;

(ii) the relative density, rounded off to the first decimal, for which the design type has been tested for packagings without inner packagings intended to contain liquids; this may be omitted when the relative density does not exceed 1.2. For packagings intended to contain solids or inner packagings, the maximum gross mass in kilograms.

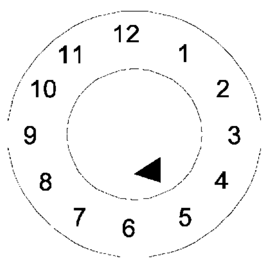
For light-gauge metal packagings, marked with the symbol 'RID/ADR' according to 6.1.3.1 (a)(ii) intended to contain substances having a viscosity at 23 °C exceeding 200 mm^2/s, the maximum gross mass in kg;

(d) Either the letter 'S' denoting that the packaging is intended for the carriage of solids or inner packagings or, for packagings (other than combination packagings) intended to contain liquids, the hydraulic test pressure which the packaging was shown to withstand in kPa rounded down to the nearest 10 kPa.

For light-gauge metal packagings, marked with the symbol 'RID/ADR, according to' 6.1.3.1(a)(ii) intended to contain liquids having a viscosity at 23 °C exceeding 200 mm^2/s, the letter 'S';

NOTE: The requirements of subparagraph (d) do not apply to packagings intended for the carriage of substances classified under UN Nos. 2814 or 2900 of Class 6.2.

(e) The last two digits of the year during which the packaging was manufactured. Packagings of types lH and 3H shall also be appropriately marked with the month of manufacture; this may be marked on the packaging in a different place from the remainder of the marking. An appropriate method is:



(f) Requirements for the construction of packagings and the tests to which they will be submitted sign for motor vehicles in international traffic ([1]);

(g) The name of the manufacturer or other identification of the packaging specified by the competent authority.

6.1.3.2. Every reusable packaging liable to undergo a reconditioning process which might obliterate the packaging markings shall bear the marks indicated in 6.1.3.1 (a) to (e) in a permanent form. Marks are permanent if they are able to withstand the reconditioning process (e.g. embossed). For packagings other than metal drums of a capacity greater than 100 litres, these permanent marks may replace the corresponding durable markings prescribed in 6.1.3.1.

6.1.3.2.1. In addition to the durable markings prescribed in 6.1.3.1, every new metal drum of a capacity greater than 100 litres shall bear the marks described in 6.1.3.1 (a) to (e) on the bottom, with an indication of the nominal thickness of at least the metal used in the body (in mm, to 0,1 mm), in permanent form. When the nominal thickness of either head of a metal drum is thinner than that of the body, the nominal thickness of the top head, body, and bottom head shall be marked on the bottom in permanent form (e.g. embossed), for example '1.0-1.2-1.0' or '0.9-1.0-1.0'. Nominal thickness of metal shall be determined according to the appropriate ISO standard, for example ISO 3574:1986 for steel. The marks indicated in 6.1.3.1 (f) and (g) shall not be applied in a permanent form except as provided in 6.1.3.2.3.

6.1.3.2.2. For remanufactured metal drums, if there is no change to the packaging type and no replacement or removal of integral structural components, the required markings need not be permanent. Every other remanufactured metal drum shall bear the markings in 6.1.3.1 to (e) in a permanent form on the top head or side.

6.1.3.2.3. Metal drums made from materials (e.g. stainless steel) designed to be reused repeatedly may bear the markings indicated in 6.1.3.1 (f) and (g) in a permanent form (e.g. embossed).

6.1.3.2.4. The marking in accordance with 6.1.3.1 is valid for only one design type or series of design types. Different surface treatments may fall within the same design type.

A 'series of design types' means packagings of the same structural design, wall thickness, material and cross-section, which differ only in their lesser design heights from the design type approved.

The closures of receptacles shall be identifiable as those referred to in the test report.

6.1.3.3. Marking shall be applied in the sequence of the subparagraphs in 6.1.3.l (for examples, see 6.1.3.7). Any additional markings authorized by a competent authority shall still enable the parts of the mark to be correctly identified with reference to 6.1.3.l.

6.1.3.4. After reconditioning a packaging, the reconditioner shall apply to it a durable marking showing, in the following sequence:

(h) The State in which the reconditioning was carried out, indicated by the distinguishing sign for motor vehicles in international traffic ([1]);

(i) The name or authorized symbol of the reconditioner;

(j) The year of reconditioning; the letter 'R'; and, for every packaging successfully passing the leakproofness test in 6.1.1.3, the additional letter 'L'.

6.1.3.5. When, after reconditioning, the markings required by 6.1.3.1 (a) to (d) no longer appear on the top head or the side of a metal drum, the reconditioner also shall apply them in a durable form followed by 6.1.3.4 (h), (i) and (j). These markings shall not identify a greater performance capability than that for which the original design type had been tested and marked.

6.1.3.6. Packagings manufactured with recycled plastics material as defined in 1.2.1 shall be marked 'REC'. This mark shall be placed near the mark prescribed in 6.1.3.1.

([1]) Distinguishing sign for motor vehicles in international traffic prescribed in Vienna Convention on Road Traffic (1968).

6.1.3.7. Examples of markings for NEW packagings

4G/Y145/S/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)	For a new fibreboard box
NL/VL823	as in 6.1.3.1 (f) and (g)	
1A1/Y1.4/150/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)	For a new steel drum to contain liquids
NL/VL824	as in 6.1.3.1 (f) and (g)	
1A2/Y150/S/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)	For a new steel drum to contain solids, or inner packagings
NL/VL825	as in 6.1.3.1 (f) and (g)	
4HW/Y136/S/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)	For a new plastics box of equivalent specification
NL/VL826	as in 6.1.3.1 (f) and (g)	
1A2/Y/100/91	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)	For a remanufactured steel drum to contain liquids
USA/MM5	as in 6.1.3.1 (f) and (g)	
RID/ADR/0A1/100/83	as in 6.1.3.1 (a) (ii), (b), (c), (d) and (e)	For a new light gauge metal packaging, nonremovable head
NL/VL123	as in 6.1.3.1 (f) and (g)	
RID/ADR/0A2/Y20/S/83	as in 6.1.3.1 (a) (ii), (b), (c), (d) and (e)	For a new light gauge metal packaging, removable head, intended to contain solids, or liquids with a viscosity at 23 °C exceeding 200 mm^2/s.
NL/VL124	as in 6.1.3.1 (f) and (g)	

6.1.3.8. Examples of markings for RECONDITIONED packagings

1A1/Y1.4/150/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)
NL/RB/85 RL	as in 6.1.3.4 (h), (i) and (j)
1A2/Y150/S/83	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)
USA/RB/85 R	as in 6.1.3.4 (h), (i) and (j)

6.1.3.9. Example of marking for SALVAGE packagings

1A2T/Y300/S/94	as in 6.1.3.1 (a) (i), (b), (c), (d) and (e)
USA/abc	as in 6.1.3.1 (f) and (g)

NOTE: The markings, for which examples are given in 6.1.3.7, 6.1.3.8 and 6.1.3.9 may be applied in a single line or in multiple lines provided the correct sequence is respected.

6.1.3.10. Certification

By affixing marking in accordance with 6.1.3.1, it is certified that mass-produced packagings correspond to the approved design type and that the requirements referred to in the approval have been met.

6.1.4. *Requirements for packagings*

6.1.4.1. Steel drums

1A1 non-removable head

1A2 removable head

6.1.4.1.1. Body and heads shall be constructed of steel sheet of a suitable type and of adequate thickness in relation to the capacity of the drum and to its intended use.

6.1.4.1.2. Body seams shall be welded on drums intended to contain more than 40 litres of liquid. Body seams shall be mechanically seamed or welded on drums intended to contain solids or 40 litres or less of liquids.

6.1.4.1.3. Chimes shall be mechanically seamed or welded. Separate reinforcing rings may be applied.

6.1.4.1.4. The body of a drum of a capacity greater than 60 litres shall, in general, have at least two expanded rolling hoops or, alternatively, at least two separate rolling hoops. If there are separate rolling hoops they shall be fitted tightly on the body and so secured that they cannot shift. Rolling hoops shall not be spot welded.

6.1.4.1.5. Openings for filling, emptying and venting in the bodies or heads of non-removable head (1A1) drums shall not exceed 7 cm in diameter. Drums with larger openings are considered to be of the removable head type (1A2). Closures for openings in the bodies and heads of drums shall be so designed and applied that they will remain secure and leakproof under normal conditions of carriage. Closure flanges may be mechanically seamed or welded in place. Gaskets or other sealing elements shall be used with closures, unless the closure is inherently leakproof.

6.1.4.1.6. Closure devices for removable head (1A2) drums shall be so designed and applied that they will remain secure and drums will remain leakproof under normal conditions of carriage. Gaskets or other sealing elements shall be used with all removable heads.

6.1.4.1.7. If materials used for body, heads, closures and fittings are not in themselves compatible with the contents to be carried, suitable internal protective coatings or treatments shall be applied. These coatings or treatments shall retain their protective properties under normal conditions of carriage.

6.1.4.1.8. Maximum capacity of drum: 450 litres.

6.1.4.1.9. Maximum net mass: 400 kg.

6.1.4.2. Aluminium drums

1B1 non-removable head

1B2 removable head

6.1.4.2.1. Body and heads shall be constructed of aluminium at least 99 % pure or of an aluminium base alloy. Material shall be of a suitable type and of adequate thickness in relation to the capacity of the drum and to its intended use.

6.1.4.2.2. All seams shall be welded. Chime seams, if any, shall be reinforced by the application of separate reinforcing rings.

6.1.4.2.3. The body of a drum of a capacity greater than 60 litres shall, in general, have at least two expanded rolling hoops or, alternatively, at least two separate rolling hoops. If there are separate rolling hoops they shall be fitted tightly on the body and so secured that they cannot shift. Rolling hoops shall not be spot welded.

6.1.4.2.4. Openings for filling, emptying and venting in the bodies or heads of non-removable head (1B1) drums shall not exceed 7 cm in diameter. Drums with larger openings are considered to be of the removable head type (1B2). Closures for openings in the bodies and heads of drums shall be so designed and applied that they will remain secure and leakproof under normal conditions of carriage. Closure flanges shall be welded in place so that the weld provides a leakproof seam. Gaskets or other sealing elements shall be used with closures, unless the closure is inherently leakproof.

6.1.4.2.5. Closure devices for removable head (1B2) drums shall be so designed and applied that they will remain secure and drums will remain leakproof under normal conditions of carriage. Gaskets or other sealing elements shall be used with all removable heads.

6.1.4.2.6. Maximum capacity of drum: 450 litres.

6.1.4.2.7. Maximum net mass: 400 kg.

6.1.4.3. Drums of metal other than aluminium or steel

1N1 non-removable head

1N2 removable head.

6.1.4.3.1. The body and heads shall be constructed of a metal or of a metal alloy other than steel or aluminium. Material shall be of a suitable type and of adequate thickness in relation to the capacity of the drum and to its intended use.

6.1.4.3.2. Chime seams, if any, shall be reinforced by the application of separate reinforcing rings. All seams, if any, shall be joined (welded, soldered, etc.) in accordance with the technical state of the art for the metal or metal alloy used.

6.1.4.3.3. The body of a drum of a capacity greater than 60 litres shall, in general, have at least two expanded rolling hoops or, alternatively, at least two separate rolling hoops. If there are separate rolling hoops they shall be fitted tightly on the body and so secured that they cannot shift. Rolling hoops shall not be spot welded.

6.1.4.3.4. Openings for filling, emptying and venting in the bodies or heads of non-removable head (1N1) drums shall not exceed 7 cm in diameter. Drums with larger openings are considered to be of the removable head type (1N2). Closures for openings in the bodies and heads of drums shall be so designed and applied that they will remain secure and leakproof under normal conditions of carriage. Closure flanges shall be joined in place (welded, soldered, etc.) in accordance with the technical state of the art for the metal or metal alloy used so that the seam join is leakproof. Gaskets or other sealing elements shall be used with closures, unless the closure is inherently leakproof.

6.1.4.3.5. Closure devices for removable head (1N2) drums shall be so designed and applied that they will remain secure and drums will remain leakproof under normal conditions of carriage. Gaskets or other sealing elements shall be used with all removable heads.

6.1.4.3.6. Maximum capacity of drum: 450 litres.

6.1.4.3.7. Maximum net mass: 400 kg.

6.1.4.4. Steel or aluminium jerricans

3A1 steel, non-removable head

3A2 steel, removable head

3B1 aluminium, non-removable head

3B2 aluminium, removable head

6.1.4.4.1. Body and heads shall be constructed of steel sheet, of aluminium at least 99 % pure or of an aluminium base alloy. Material shall be of a suitable type and of adequate thickness in relation to the capacity of the jerrican and to its intended use.

6.1.4.4.2. Chimes of steel jerricans shall be mechanically seamed or welded. Body seams of steel jerricans intended to contain more than 40 litres of liquid shall be welded. Body seams of steel jerricans intended to contain 40 litres or less shall be mechanically seamed or welded. For aluminium jerricans, all seams shall be welded. Chime seams, if any, shall be reinforced by the application of a separate reinforcing ring.

6.1.4.4.3. Openings in non-removable head jerricans (3A1 and 3B1) shall not exceed 7 cm in diameter. Jerricans with larger openings are considered to be of the removable head type (3A2 and 3B2). Closures shall be so designed that they will remain secure and leakproof under normal conditions of carriage. Gaskets or other sealing elements shall be used with closures, unless the closure is inherently leakproof.

6.1.4.4.4. If materials used for body, heads, closures and fittings are not in themselves compatible with the contents to be carried, suitable internal protective coatings or treatments shall be applied. These coatings or treatments shall retain their protective properties under normal conditions of carriage.

6.1.4.4.5. Maximum capacity of jerrican: 60 litres.

6.1.4.4.6. Maximum net mass: 120 kg.

6.1.4.5. Plywood drums

1D

6.1.4.5.1. The wood used shall be well seasoned, commercially dry and free from any defect likely to lessen the effectiveness of the drum for the purpose intended. If a material other than plywood is used for the manufacture of the heads, it shall be of a quality equivalent to the plywood.

6.1.4.5.2. At least two-ply plywood shall be used for the body and at least three-ply plywood for the heads; the plies shall be firmly glued together by a water resistant adhesive with their grain crosswise.

6.1.4.5.3. The body and heads of the drum and their joins shall be of a design appropriate to the capacity of the drum and to its intended use.

6.1.4.5.4. In order to prevent sifting of the contents, lids shall be lined with kraft paper or some other equivalent material which shall be securely fastened to the lid and extend to the outside along its full circumference.

6.1.4.5.5. Maximum capacity of drum: 250 litres.

6.1.4.5.6. Maximum net mass: 400 kg.

6.1.4.6. Wooden barrels

2C1 bung type

2C2 removable head

6.1.4.6.1. The wood used shall be of good quality, straight grained, well seasoned and free from knots, bark, rotten wood, sapwood or other defects likely to lessen the effectiveness of the barrel for the purpose intended.

6.1.4.6.2. The body and heads shall be of a design appropriate to the capacity of the barrel and to its intended use.

6.1.4.6.3. Staves and heads shall be sawn or cleft with the grain so that no annual ring extends over more than half the thickness of a stave or head.

6.1.4.6.4. Barrel hoops shall be of steel or iron of good quality. The hoops of removable head (2C2) barrels may be of a suitable hardwood.

6.1.4.6.5. Wooden barrels 2C1: the diameter of the bunghole shall not exceed half the width of the stave in which it is placed.

6.1.4.6.6. Wooden barrels 2C2: heads shall fit tightly into the crozes.

6.1.4.6.7. Maximum capacity of barrel: 250 litres.

6.1.4.6.8. Maximum net mass: 400 kg.

6.1.4.7. Fibreboard drums

1G

6.1.4.7.1. The body of the drum shall consist of multiple plies of kraft paper or fibreboard (without corrugations) firmly glued or laminated together and may include one or more protective layers of bitumen, waxed kraft paper, metal foil, plastics material, etc.

6.1.4.7.2. Heads shall be of natural wood, fibreboard, metal, plywood, plastics or other suitable material and may include one or more protective layers of bitumen, waxed kraft paper, metal foil, plastics material, etc.

6.1.4.7.3. The body and heads of the drum and their joins shall be of a design appropriate to the capacity of the drum and to its intended use.

6.1.4.7.4. The assembled packaging shall be sufficiently water resistant so as not to delaminate under normal conditions of carriage.

6.1.4.7.5. Maximum capacity of drum: 450 litres.

6.1.4.7.6. Maximum net mass: 400 kg.

6.1.4.8. Plastics drums and jerricans

1H1 drums, non-removable head

1H2 drums, removable head

3H1 jerricans, non-removable head

3H2 jerricans, removable head

6.1.4.8.1. The packaging shall be manufactured from suitable plastics material and be of adequate strength in relation to its capacity and intended use. Except for recycled plastics material as defined in 1.2.1, no used material other than production residues or regrind from the same manufacturing process may be used. The packaging shall be adequately resistant to ageing and to degradation caused either by the substance contained or by ultra-violet radiation. Any permeation of the substance contained in the package, or recycled plastics material used to produce new packaging, shall not constitute a danger under normal conditions of carriage.

6.1.4.8.2. If protection against ultra-violet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, retesting may be waived if the carbon black content does not exceed 2 % by mass or if the pigment content does not exceed 3 % by mass; the content of inhibitors of ultra-violet radiation is not limited.

6.1.4.8.3. Additives serving purposes other than protection against ultra-violet radiation may be included in the composition of the plastics material provided that they do not adversely affect the chemical and physical properties of the material of the packaging. In such circumstances, retesting may be waived.

6.1.4.8.4. The wall thickness at every point of the packaging shall be appropriate to its capacity and intended use, taking into account the stresses to which each point is liable to be exposed.

6.1.4.8.5. Openings for filling, emptying and venting in the bodies or heads of non-removable head drums (1H1) and jerricans (3H1) shall not exceed 7 cm in diameter. Drums and jerricans with larger openings are considered to be of the removable head type (1H2 and 3H2). Closures for openings in the bodies or heads of drums and jerricans shall be so designed and applied that they will remain secure and leakproof under normal conditions of carriage. Gaskets or other sealing elements shall be used with closures unless the closure is inherently leakproof.

6.1.4.8.6. Closure devices for removable head drums and jerricans shall be so designed and applied that they will remain secure and leakproof under normal conditions of carriage. Gaskets shall be used with all removable heads unless the drum or jerrican design is such that, where the removable head is properly secured, the drum or jerrican is inherently leakproof.

6.1.4.8.7. The maximum permissible permeability for flammable liquids shall be 0,008 g/l.h at 23 °C (see 6.1.5.8).

6.1.4.8.8. Where recycled plastics material is used for production of new packaging, the specific properties of the recycled material shall be assured and documented regularly as part of a quality assurance programme recognised by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as the awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packaging produced using that material. In addition, the packaging manufacturer's quality assurance programme under 6.1.1.4 shall include performance of the mechanical design type test in 6.1.5 on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing according to 6.1.5.6.

6.1.4.8.9. Maximum capacity of drums and jerricans:

1H1, 1H2: 450 litres

3H1, 3H2: 60 litres.

6.1.4.8.10. Maximum net mass:

1H1, 1H2: 400 kg

3H1, 3H2: 120 kg.

6.1.4.9. Boxes of natural wood

4C1 ordinary

4C2 with sift-proof walls

6.1.4.9.1. The wood used shall be well seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the box. The strength of the material used and the method of construction shall be appropriate to the capacity and intended use of the box. The tops and bottoms may be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type.

6.1.4.9.2. Fastenings shall be resistant to vibration experienced under normal conditions of carriage. End grain nailing shall be avoided whenever practicable. Joins which are likely to be highly stressed shall be made using clenched or annular ring nails or equivalent fastenings.

6.1.4.9.3. Box 4C2: each part shall consist of one piece or be equivalent thereto. Parts are considered equivalent to one piece when one of the following methods of glued assembly is used: Lindermann joint, tongue and groove joint, ship lap or rabbet joint or butt joint with at least two corrugated metal fasteners at each joint.

6.1.4.9.4. Maximum net mass: 400 kg.

6.1.4.10. Plywood boxes

4D

6.1.4.10.1. Plywood used shall be at least 3-ply. It shall be made from well seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the box. The strength of the material used and the method of construction shall be appropriate to the capacity and intended use of the box. All adjacent plies shall be glued with water resistant adhesive. Other suitable materials may be used together with plywood in the construction of boxes. Boxes shall be firmly nailed or secured to corner posts or ends or be assembled by equally suitable devices.

6.1.4.10.2. Maximum net mass: 400 kg.

6.1.4.11. Reconstituted wood boxes

4F

6.1.4.11.1. The walls of boxes shall be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type. The strength of the material used and the method of construction shall be appropriate to the capacity of the boxes and to their intended use.

6.1.4.11.2. Other parts of the boxes may be made of other suitable material.

6.1.4.11.3. Boxes shall be securely assembled by means of suitable devices.

6.1.4.11.4. Maximum net mass: 400 kg.

6.1.4.12. Fibreboard boxes

4G

6.1.4.12.1. Strong and good quality solid or double-faced corrugated fibreboard (single or multiwall) shall be used, appropriate to the capacity of the box and to its intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over a period of 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m^2 (see ISO 535:1991). It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting of corrugated fibreboard shall be firmly glued to the facings.

6.1.4.12.2. The ends of boxes may have a wooden frame or be entirely of wood or other suitable material. Reinforcements of wooden battens or other suitable material may be used.

6.1.4.12.3. Manufacturing joins in the body of boxes shall be taped, lapped and glued, or lapped and stitched with metal staples. Lapped joins shall have an appropriate overlap.

6.1.4.12.4. Where closing is effected by gluing or taping, a water resistant adhesive shall be used.

6.1.4.12.5. Boxes shall be designed so as to provide a good fit to the contents.

6.1.4.12.6. Maximum net mass: 400 kg.

6.1.4.13. Plastics boxes

4H1 expanded plastics boxes

4H2 solid plastics boxes

6.1.4.13.1. The box shall be manufactured from suitable plastics material and be of adequate strength in relation to its capacity and intended use. The box shall be adequately resistant to ageing and to degradation caused either by the substance contained or by ultra-violet radiation.

6.1.4.13.2. An expanded plastics box shall comprise two parts made of a moulded expanded plastics material, a bottom section containing cavities for the inner packagings and a top section covering and interlocking with the bottom section. The top and bottom sections shall be designed so that the inner packagings fit snugly. The closure cap for any inner packaging shall not be in contact with the inside of the top section of this box.

6.1.4.13.3. For dispatch, an expanded plastics box shall be closed with a self-adhesive tape having sufficient tensile strength to prevent the box from opening. The adhesive tape shall be weather resistant and its adhesive compatible with the expanded plastics material of the box. Other closing devices at least equally effective may be used.

6.1.4.13.4. For solid plastics boxes, protection against ultra-violet radiation, if required, shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the box. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, retesting may be waived if the carbon black content does not exceed 2 % by mass or if the pigment content does not exceed 3 % by mass; the content of inhibitors of ultra-violet radiation is not limited.

6.1.4.13.5. Additives serving purposes other than protection against ultra-violet radiation may be included in the composition of the plastics material provided that they do not adversely affect the chemical or physical properties of the material of the box. In such circumstances, retesting may be waived.

6.1.4.13.6. Solid plastics boxes shall have closure devices made of a suitable material of adequate strength and so designed as to prevent the box from unintentional opening.

6.1.4.13.7. Where recycled plastics material is used for production of new packaging, the specific properties of the recycled material shall be assured and documented regularly as part of a quality assurance programme recognised by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as the awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packaging produced using that material. In addition, the packaging manufacturer's quality assurance programme under 6.1.1.4 shall include performance of the mechanical design type test in 6.1.5 on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing according to 6.1.5.6.

6.1.4.13.8. Maximum net mass

4H1: 60 kg

4H2: 400 kg

6.1.4.14. Steel or aluminium boxes

4A steel

4B aluminium

6.1.4.14.1. The strength of the metal and the construction of the box shall be appropriate to the capacity of the box and to its intended use.

6.1.4.14.2. Boxes shall be lined with fibreboard or felt packing pieces or shall have an inner liner or coating of suitable material, as required. If a double seamed metal liner is used, steps shall be taken to prevent the ingress of substances, particularly explosives, into the recesses of the seams.

6.1.4.14.3. Closures may be of any suitable type; they shall remain secured under normal conditions of carriage.

6.1.4.14.4. Maximum net mass: 400 kg.

6.1.4.15. Textile bags

5L1 without inner liner or coating

5L2 sift-proof

5L3 water resistant

6.1.4.15.1. The textiles used shall be of good quality. The strength of the fabric and the construction of the bag shall be appropriate to the capacity of the bag and to its intended use.

6.1.4.15.2. Bags, sift-proof, 5L2: the bag shall be made sift-proof, for example by the use of:

(a) paper bonded to the inner surface of the bag by a water resistant adhesive such as bitumen;

(b) plastics film bonded to the inner surface of the bag; or

(c) one or more inner liners made of paper or plastics material.

6.1.4.15.3. Bags, water resistant, 5L3: to prevent the entry of moisture the bag shall be made waterproof, for example by the use of:

(a) separate inner liners of water resistant paper (e.g. waxed kraft paper, tarred paper or plastics-coated kraft paper);

(b) plastics film bonded to the inner surface of the bag; or

(c) one or more inner liners made of plastics material.

6.1.4.15.4. Maximum net mass: 50 kg.

6.1.4.16. Woven plastics bags

5H1 without inner liner or coating

5H2 sift-proof

5H3 water resistant

6.1.4.16.1. Bags shall be made from stretched tapes or monofilaments of a suitable plastics material. The strength of the material used and the construction of the bag shall be appropriate to the capacity of the bag and to its intended use.

6.1.4.16.2. If the fabric is woven flat, the bags shall be made by sewing or some other method ensuring closure of the bottom and one side. If the fabric is tubular, the bag shall be closed by sewing, weaving or some other equally strong method of closure.

6.1.4.16.3. Bags, sift-proof, 5H2: the bag shall be made sift-proof, for example by means of:

(a) paper or a plastics film bonded to the inner surface of the bag; or

(b) one or more separate inner liners made of paper or plastics material.

6.1.4.16.4. Bags, water resistant, 5H3: to prevent the entry of moisture, the bag shall be made waterproof, for example by means of:

(a) separate inner liners of water resistant paper (e.g. waxed kraft paper, double-tarred kraft paper or plastics-coated kraft paper);

(b) plastics film bonded to the inner or outer surface of the bag; or

(c) one or more inner plastics liners.

6.1.4.16.5. Maximum net mass: 50 kg.

6.1.4.17. Plastics film bags

5H4

6.1.4.17.1. Bags shall be made of a suitable plastics material. The strength of the material used and the construction of the bag shall be appropriate to the capacity of the bag and to its intended use. Joins and closures shall withstand pressures and impacts liable to occur under normal conditions of carriage.

6.1.4.17.2. Maximum net mass: 50 kg.

6.1.4.18. Paper bags

5M1 multiwall

5M2 multiwall, water resistant

6.1.4.18.1. Bags shall be made of a suitable kraft paper or of an equivalent paper with at least three plies. The strength of the paper and the construction of the bags shall be appropriate to the capacity of the bag and to its intended use. Joins and closures shall be sift-proof.

6.1.4.18.2. Paper bags 5M2: to prevent the entry of moisture, a bag of four plies or more shall be made waterproof by the use of either a water resistant ply as one of the two outermost plies or a water resistant barrier made of a suitable protective material between the two outermost plies; a bag of three plies shall be made waterproof by the use of a water resistant ply as the outermost ply. Where there is a danger of the substance contained reacting with moisture or where it is packed damp, a waterproof ply or barrier, such as double-tarred kraft paper, plastics-coated kraft paper, plastics film bonded to the inner surface of the bag, or one or more inner plastics liners, shall also be placed next to the substance. Joins and closures shall be waterproof.

6.1.4.18.3. Maximum net mass: 50 kg.

6.1.4.19. Composite packagings (plastics material)

6HA1	plastics receptacle with outer steel drum
6HA2	plastics receptacle with outer steel crate or box
6HB1	plastics receptacle with outer aluminium drum
6HB2	plastics receptacle with outer aluminium crate or box
6HC	plastics receptacle with outer wooden box
6HD1	plastics receptacle with outer plywood drum
6HD2	plastics receptacle with outer plywood box
6HG1	plastics receptacle with outer fibreboard drum
6HG2	plastics receptacle with outer fibreboard box
6HH1	plastics receptacle with outer plastics drum
6HH2	plastics receptacle with outer solid plastics box

6.1.4.19.1. Inner receptacle

6.1.4.19.1.1. The requirements of 6.1.4.8.1 and 6.1.4.8.4 to 6.1.4.8.7 apply to plastics inner receptacles.

6.1.4.19.1.2. The plastics inner receptacle shall fit snugly inside the outer packaging, which shall be free of any projection that might abrade the plastics material.

6.1.4.19.1.3. Maximum capacity of inner receptacle:

6HA1, 6HB1, 6HD1, 6HG1, 6HH1: 250 litres

6HA2, 6HB2, 6HC, 6HD2, 6HG2, 6HH2: 60 litres.

6.1.4.19.1.4. Maximum net mass:

6HA1, 6HB1, 6HD1, 6HG1, 6HH1: 400 kg

6HA2, 6HB2, 6HC, 6HD2, 6HG2, 6HH2: 75 kg.

6.1.4.19.2. Outer packaging

6.1.4.19.2.1. Plastics receptacle with outer steel or aluminium drum 6HA1 or 6HB1; the relevant requirements of 6.1.4.1 or 6.1.4.2, as appropriate, apply to the construction of the outer packaging.

6.1.4.19.2.2. Plastics receptacle with outer steel or aluminium crate or box 6HA2 or 6HB2; the relevant requirements of 6.1.4.14 apply to the construction of the outer packaging.

6.1.4.19.2.3. Plastics receptacle with outer wooden box 6HC; the relevant requirements of 6.1.4.9 apply to the construction of the outer packaging.

6.1.4.19.2.4. Plastics receptacle with outer plywood drum 6HD1; the relevant requirements of 6.1.4.5 apply to the construction of the outer packaging.

6.1.4.19.2.5. Plastics receptacle with outer plywood box 6HD2; the relevant requirements of 6.1.4.10 apply to the construction of the outer packaging.

6.1.4.19.2.6. Plastics receptacle with outer fibreboard drum 6HG1; the requirements of 6.1.4.7.1 to 6.1.4.7.4 apply to the construction of the outer packaging.

6.1.4.19.2.7. Plastics receptacle with outer fibreboard box 6HG2; the relevant requirements of 6.1.4.12 apply to the construction of the outer packaging.

6.1.4.19.2.8. Plastics receptacle with outer plastics drum 6HH1; the requirements of 6.1.4.8.1 to 6.1.4.8.6 apply to the construction of the outer packaging.

6.1.4.19.2.9. Plastics receptacle with outer solid plastics box (including corrugated plastics material) 6HH2; the requirements of 6.1.4.13.1 and 6.1.4.13.4 to 6.1.4.13.6 apply to the construction of the outer packaging.

6.1.4.20. Composite packagings (glass, porcelain or stoneware)

6PA1	receptacle with outer steel drum
6PA2	receptacle with outer steel crate or box
6PB1	receptacle with outer aluminium drum
6PB2	receptacle with outer aluminium crate or box
6PC	receptacle with outer wooden box
6PD1	receptacle with outer plywood drum
6PD2	receptacle with outer wickerwork hamper
6PG1	receptacle with outer fibreboard drum
6PG2	receptacle with outer fibreboard box
6PH1	receptacle with outer expanded plastics packaging
6PH2	receptacle with outer solid plastics packaging

6.1.4.20.1. Inner receptacle

6.1.4.20.1.1. Receptacles shall be of a suitable form (cylindrical or pear-shaped) and be made of good quality material free from any defect that could impair their strength. The walls shall be sufficiently thick at every point and free from internal stresses.

6.1.4.20.1.2. Screw-threaded plastics closures, ground glass stoppers or closures at least equally effective shall be used as closures for receptacles. Any part of the closure likely to come into contact with the contents of the receptacle shall be resistant to those contents. Care shall be taken to ensure that the closures are so fitted as to be leakproof and are suitably secured to prevent any loosening during carriage. If vented closures are necessary, they shall comply with 4.1.1.8.

6.1.4.20.1.3. The receptacle shall be firmly secured in the outer packaging by means of cushioning and/or absorbent materials.

6.1.4.20.1.4. Maximum capacity of receptacle: 60 litres.

6.1.4.20.1.5. Maximum net mass: 75 kg.

6.1.4.20.2. Outer packaging

6.1.4.20.2.1. Receptacle with outer steel drum 6PA1; the relevant requirements of 6.1.4.1 apply to the construction of the outer packaging. The removable lid required for this type of packaging may nevertheless be in the form of a cap.

6.1.4.20.2.2. Receptacle with outer steel crate or box 6PA2; the relevant requirements of 6.1.4.14 apply to the construction of the outer packaging. For cylindrical receptacles the outer packaging shall, when upright, rise above the receptacle and its closure. If the crate surrounds a pearshaped receptacle and is of matching shape, the outer packaging shall be fitted with a protective cover (cap).

6.1.4.20.2.3. Receptacle with outer aluminium drum 6PB1; the relevant requirements of 6.1.4.2 apply to the construction of the outer packaging.

6.1.4.20.2.4. Receptacle with outer aluminium crate or box 6PB2; the relevant requirements of 6.1.4.14 apply to the construction of the outer packaging.

6.1.4.20.2.5. Receptacle with outer wooden box 6PC; the relevant requirements of 6.1.4.9 apply to the construction of the outer packaging.

6.1.4.20.2.6. Receptacle with outer plywood drum 6PD1; the relevant requirements of 6.1.4.5 apply to the construction of the outer packaging.

6.1.4.20.2.7. Receptacle with outer wickerwork hamper 6PD2. The wickerwork hamper shall be properly made with material of good quality. It shall be fitted with a protective cover (cap) so as to prevent damage to the receptacle.

6.1.4.20.2.8. Receptacle with outer fibreboard drum 6PG1; the relevant requirements of 6.1.4.7.1 to 6.1.4.7.4 apply to the construction of the outer packaging.

6.1.4.20.2.9. Receptacle with outer fibreboard box 6PG2; the relevant requirements of 6.1.4.12 apply to the construction of the outer packaging.

6.1.4.20.2.10. Receptacle with outer expanded plastics or solid plastics packaging (6PH1 or 6PH2); the materials of both outer packagings shall meet the relevant requirements of 6.1.4.13. Solid plastics packaging shall be manufactured from high density polyethylene or some other comparable plastics material. The removable lid for this type of packaging may nevertheless be in the form of a cap.

6.1.4.21. Combination packagings

The relevant requirements of section 6.1.4 for the outer packagings to be used, are applicable.

NOTE: For the inner and outer packagings to be used, see the relevant packing instructions in Chapter 4.1.

6.1.4.22. Light gauge metal packagings

0A1 non-removable-head

0A2 removable-head

6.1.4.22.1. The sheet metal for the body and ends shall be of suitable steel, and of a gauge appropriate to the capacity and intended use of the packaging.

6.1.4.22.2. The joints shall be welded, at least double-seamed by welting or produced by a method ensuring a similar degree of strength and leakproofness.

6.1.4.22.3. Inner coatings of zinc, tin, lacquer, etc. shall be tough and shall adhere to the steel at every point, including the closures.

6.1.4.22.4. Openings for filling, emptying and venting in the bodies or heads of non-removable head (0A1) packagings shall not exceed 7 cm in diameter. Packagings with larger openings shall be considered to be of the removable-head type (0A2).

6.1.4.22.5. The closures of non-removable-head packagings (0A1) shall either be of the screwthreaded type or be capable of being secured by a screwable device or a device at least equally effective. The closures of removable-head packagings (0A2) shall be so designed and fitted that they stay firmly closed and the packagings remain leakproof in normal conditions of carriage.

6.1.4.22.6. Maximum capacity of packagings: 40 litres.

6.1.4.22.7. Maximum net mass: 50 kg.

6.1.5. *Test requirements for packagings*

6.1.5.1. Performance and frequency of tests

6.1.5.1.1. The design type of each packaging shall be tested as provided in 6.1.5 in accordance with procedures established by the competent authority.

6.1.5.1.2. Tests shall be successfully performed on each packaging design type before such packaging is used. A packaging design type is defined by the design, size, material and thickness, manner of construction and packing, but may include various surface treatments. It also includes packagings which differ from the design type only in their lesser design height.

6.1.5.1.3. Tests shall be repeated on production samples at intervals established by the competent authority. For such tests on paper or fibreboard packagings, preparation at ambient conditions is considered equivalent to the requirements of 6.1.5.2.3.

6.1.5.1.4. Tests shall also be repeated after each modification which alters the design, material or manner of construction of a packaging.

6.1.5.1.5. The competent authority may permit the selective testing of packagings that differ only in minor respects from a tested type, e.g. smaller sizes of inner packagings or inner packagings of lower net mass; and packagings such as drums, bags and boxes which are produced with small reductions in external dimension(s).

6.1.5.1.6. Where an outer packaging of a combination packaging has been successfully tested with different types of inner packagings, a variety of such different inner packagings may also be assembled in this outer packaging. In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:

(a) Inner packagings of equivalent or smaller size may be used provided:

(i) the inner packagings are of similar design to the tested inner packagings (e.g. shape — round, rectangular, etc.);

(ii) the material of construction of the inner packagings (glass, plastics, metal, etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;

(iii) the inner packagings have the same or smaller openings and the closure is of similar design (e.g. screw cap, friction lid, etc.);

(iv) sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings;

(v) inner packagings are oriented within the outer packaging in the same manner as in the tested package.

(b) A lesser number of the tested inner packagings, or of the alternative types of inner packagings identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings.

6.1.5.1.7. Articles or inner packagings of any type for solids or liquids may be assembled and carried without testing in an outer packaging under the following conditions:

(a) The outer packaging shall have been successfully tested in accordance with 6.1.5.3 with fragile (e.g. glass) inner packagings containing liquids using the packing group I drop height;

(b) The total combined gross mass of inner packagings shall not exceed one half the gross mass of inner packagings used for the drop test in (a) above;

(c) The thickness of cushioning material between inner packagings and between inner packagings and the outside of the packaging shall not be reduced below the corresponding thicknesses in the originally tested packaging; and if a single inner packaging was used in the original test, the thicknesses of cushioning between inner packagings shall not be less than the thickness of cushioning between the outside of the packaging and the inner packaging in the original test. If either fewer or smaller inner packagings are used (as compared to the inner packagings used in the drop test), sufficient additional cushioning material shall be used to take up void spaces;

(d) The outer packaging shall have passed successfully the stacking test in 6.1.5.6 while empty. The total mass of identical packages shall be based on the combined mass of inner packagings used for the drop test in (a) above;

(e) Inner packagings containing liquids shall be completely surrounded with a sufficient quantity of absorbent material to absorb the entire liquid contents of the inner packagings;

(f) If the outer packaging is intended to contain inner packagings for liquids and is not leakproof, or is intended to contain inner packagings for solids and is not siftproof, a means of containing any liquid or solid contents in the event of leakage shall be provided in the form of a leakproof liner, plastics bag or other equally efficient means of containment. For packagings containing liquids, the absorbent material required in above shall be placed inside the means of containing the liquid contents;

(g) Packagings shall be marked in accordance with 6.1.3 as having been tested to packing group I performance for combination packagings. The marked gross mass in kilograms shall be the sum of the mass of the outer packaging plus one half of the mass of the inner packaging(s) as used for the drop test referred to in (a) above. Such a packaging mark shall also contain a letter 'V' as described in 6.1.2.4.

6.1.5.1.8. The competent authority may at any time require proof, by tests in accordance with this section, that serially-produced packagings meet the requirements of the design type tests. For verification purposes records of such tests shall be maintained.

6.1.5.1.9. If an inner treatment or coating is required for safety reasons, it shall retain its protective properties even after the tests.

6.1.5.1.10. Provided the validity of the test results is not affected and with the approval of the competent authority, several tests may be made on one sample.

6.1.5.1.11. Salvage packagings

Salvage packagings (see 1.2.1) shall be tested and marked in accordance with the requirements applicable to packing group II packagings intended for the carriage of solids or inner packagings, except as follows:

(a) The test substance used in performing the tests shall be water, and the packagings shall be filled to not less than 98 % of their maximum capacity. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass so long as they are placed so that the test results are not affected. Alternatively, in performing the drop test, the drop height may be varied in accordance with 6.1.5.3.4(b);

(b) Packagings shall, in addition, have been successfully subjected to the leakproofness test at 30 kPa, with the results of this test reflected in the test report required by 6.1.5.9;

(c) Packagings shall be marked with the letter 'T' as described in 6.1.2.4.

6.1.5.2. Preparation of packagings for testing

6.1.5.2.1. Tests shall be carried out on packagings prepared as for carriage including, with respect to combination packagings, the inner packagings used. Inner or single receptacles or packagings shall be filled to not less than 98 % of their maximum capacity for liquids or 95 % for solids. For combination packagings where the inner packaging is designed to carry liquids and solids, separate testing is required for both liquid and solid contents. The substances or articles to be carried in the packagings may be replaced by other substances or articles except where this would invalidate the results of the tests. For solids, when another substance is used it shall have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass, so long as they are placed so that the test results are not affected.

6.1.5.2.2. In the drop tests for liquids, when another substance is used, it shall be of similar relative density and viscosity to those of the substance being carried. Water may also be used for the liquid drop test under the conditions in 6.1.5.3.4.

6.1.5.2.3. Paper or fibreboard packagings shall be conditioned for at least 24 hours in an atmosphere having a controlled temperature and relative humidity (r.h.). There are three options, one of which shall be chosen. The preferred atmosphere is 23 ± 2 °C and 50 % ± 2 % r.h. The two other options are 20 ± 2 °C and 65 % ± 2 % r.h. or 27 ± 2 °C and 65 % ± 2 % r.h.

NOTE: Average values shall fall within these limits. Short-term fluctuations and measurement limitations may cause individual measurements to vary by up to ±5 % relative humidity without significant impairment of test reproducibility.

6.1.5.2.4. Bung-type barrels made of natural wood shall be left filled with water for at least 24 hours before the tests.

6.1.5.2.5. To check that their chemical compatibility with the liquids is sufficient, plastics drums and jerricans in accordance with 6.1.4.8 and if necessary composite packagings (plastics material) in accordance with 6.1.4.19 shall be subjected to storage at ambient temperature for six months, during which time the test samples shall be kept filled with the goods they are intended to carry.

For the first and last 24 hours of storage, the test samples shall be placed with the closure downwards. However, packagings fitted with a vent shall be so placed on each occasion for five minutes only. After this storage the test samples shall undergo the tests prescribedin 6.1.5.3 to 6.1.5.6.

When it is known that the strength properties of the plastics material of the inner receptacles of composite packagings (plastics material) are not significantly altered by the action of the filling substance, it shall not be necessary to check that the chemical compatibility is sufficient.

A significant alteration in strength properties means:

(a) distinct embrittlement; or

(b) a considerable decrease in elasticity, unless related to a not less than proportionate increase in the elongation under load.

Where the behaviour of the plastics material has been established by other means, the above compatibility test may be dispensed with. Such procedures shall be at least equivalent to the above compatibility test and be recognized by the competent authority.

NOTE: For plastics drums and jerricans and composite packagings (plastics material) made of high or average molecular mass polyethylene, see also 6.1.5.2.6 below.

6.1.5.2.6. For high molecular mass polyethylene drums and jerricans in accordance with 6.1.4.8 and if necessary composite packagings of high molecular mass polyethylene in accordance with 6.1.4.19, conforming to the following specifications:

— relative density at 23 °C after thermal conditioning for one hour at 100 °C ≥ 0,940, in accordance with ISO Standard 1183,

— melt flow rate at 190 °C/21,6 kg load ≤ 12 g/10 min, in accordance with ISO Standard 1133, for jerricans in accordance with 6.1.4.8 of packing groups II and III and, if necessary, for composite packagings in accordance with 6.1.4.19 in average molecular mass polyethylene meeting the following specifications:

— relative density at 23 °C after thermal conditioning for one hour at 100 °C ≥ 0,940, in accordance with ISO Standard 1183,

— melt flow rate at 190 °C/2,160 kg load ≤ 0,5 g/10 min and ≥ 0,1g/10 min, in accordance with ISO Standard 1133,

— melt flow rate at 190 °C/5 kg load ≤ 3 g/10 min and ≥ 0,5 g/10 min, in accordance with ISO Standard 1133,

chemical compatibility with the liquids listed in 6.1.6.2 may be verified as follows with standard liquids (see 6.1.6.1).

The sufficient chemical compatibility of these packagings may be verified by storage for three weeks at 40 °C with the appropriate standard liquid; where this standard liquid is water, proof of chemical compatibility is not required.

For the first and last 24 hours of storage, the test samples shall be placed with the closure downwards. However, packagings fitted with a vent shall be so placed on each occasion for five minutes only. After this storage, the test samples shall undergo the tests prescribed in 6.1.5.3 to 6.1.5.6.

When a packaging design-type has satisfied the approval tests with a standard liquid, the comparable filling substances listed in 6.1.6.2 may be accepted for carriage without further testing, subject to the following conditions:

— the relative densities of the filling substances shall not exceed that used to determine the height for the drop test and the mass for the stacking test;

— the vapour pressures of the filling substances at 50 °C or 55 °C shall not exceed that used to determine the pressure for the internal pressure test.

The compatibility test for tert-Butyl hydroperoxide with more than 40 % peroxide content and peroxyacetic acids of Class 5.2, shall not be carried out using standard liquids. For these substances, proof of sufficient chemical compatibility of the test samples shall be provided during a storage period of six months at ambient temperature with the substances they are intended to carry.

The procedure in accordance with this paragraph also applies to high density, high or average molecular mass polyethylene packagings, the internal surface of which is fluorinated.

6.1.5.2.7. For drums and jerricans conforming to 6.1.4.8, and where necessary composite packagings conforming to 6.1.4.19, made of high or average molecular mass polyethylene, which have passed the test in 6.1.5.2.6, filling substances other than those listed in 6.1.6.2 may also be approved. Such approval shall be based on laboratory tests proving that the effect of such filling substances on the test specimens is less than that of the standard liquids. The processes of deterioration to be taken into account shall be the following: softening through swelling, cracking under stress and molecular degradation. The same conditions as those set out in 6.1.5.2.6 above shall apply with respect to relative density and vapour pressure.

6.1.5.2.8. Provided that the strength properties of the plastics inner packagings of a combination packaging are not significantly altered by the action of the filling substance, proof of chemical compatibility is not necessary. A significant alteration in strength properties means:

(a) distinct embrittlement;

(b) a considerable decrease in elasticity, unless related to a not less than proportionate increase in elastic elongation.

6.1.5.3. Drop test [1]

6.1.5.3.1. Number of test samples (per design type and manufacturer) and drop orientation.

For other than flat drops the centre of gravity shall be vertically over the point of impact.

Where more than one orientation is possible for a given drop test, the orientation most likely to result in failure of the packaging shall be used.

[1] See ISO-Standard 2248.

Packaging	No. of test samples	Drop orientation
(a) Steel drums Aluminium drums Drums of metal other than steel or aluminium Steel jerricans Aluminium jerricans Plywood drums Wooden barrels Fibreboard drums Plastics drums and jerricans Composite packagings which are in the shape of a drum Light gauge metal packagings	Six (three for each drop)	First drop (using three samples): the packaging shall strike the target diagonally on the chime or, if the packaging has no chime, on a circumferential seam or an edge. Second drop (using the other three samples): the packaging shall strike the target on the weakest part not tested by the first drop, for example a closure or, for some cylindrical drums, the welded longitudinal seam of the drum body
(b) Boxes of natural wood Plywood boxes Reconstituted wood boxes Fibreboard boxes Plastics boxes Steel or aluminium boxes Composite packagings which are in the shape of a box	Five (one for each drop)	First drop: flat on the bottom Second drop: flat on the top Third drop: flat on the long side Fourth drop: flat on the short side Fifth drop: on a corner
(c) Bags — single-ply with a side seam	Three (three drops per bag)	First drop: flat on a wide face Second drop: flat on a narrow face Third drop: on an end of the bag
(d) Bags — single-ply without a side seam, or multi-ply	Three (two drops per bag)	First drop: flat on a wide face Second drop: on an end of the bag
(e) Composite packagings (glass, stoneware or porcelain), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii) and which are in the shape of a drum or box	Three (one for each drop)	Diagonally on the bottom chime, or, if there is no chime, on a circumferential seam or the bottom edge

6.1.5.3.2. Special preparation of test samples for the drop test

The temperature of the test sample and its contents shall be reduced to – 18 °C or lower for the following packagings:

(a) plastics drums (see 6.1.4.8);

(b) plastics jerricans (see 6.1.4.8);

(c) plastics boxes other than expanded plastics boxes (see 6.1.4.13);

(d) composite packagings (plastics material) (see 6.1.4.19) and;

(e) combination packagings with plastics inner packagings, other than plastics bags intended to contain solids or articles.

Where test samples are prepared in this way, the conditioning in 6.1.5.2.3 may be waived. Test liquids shall be kept in the liquid state by the addition of anti-freeze if necessary.

6.1.5.3.3. Target

The target shall be a rigid, non-resilient, flat and horizontal surface.

6.1.5.3.4. Drop height

For solids and liquids, if the test is performed with the solid or liquid to be carried or with another substance having essentially the same physical characteristics:

Packing Group I	Packing Group II	Packing Group III
1,8 m	1,2 m	0,8 m

For liquids if the test is performed with water:

(a) where the substances to be carried have a relative density not exceeding 1.2:

Packing Group I	Packing Group II	Packing Group III
1,8 m	1,2 m	0,8 m

(b) where the substances to be carried have a relative density exceeding 1.2, the drop height shall be calculated on the basis of the relative density (d) of the substance to be carried, rounded up to the first decimal, as follows:

Packing Group I	Packing Group II	Packing Group III
d × 1,5 (m)	d × 1,0 (m)	d × 0,67 (m)

(c) for light-gauge metal packagings, marked with symbol 'RID/ADR' according to 6.1.3.1(a) (ii) intended for the carriage of substances having a viscosity at 23 °C greater than 200 mm^2/s (corresponding to a flow time of 30 seconds with an ISO flow cup having a jet orifice of 6 mm diameter in accordance with ISO Standard 2431:1993)

(i) if the relative density does not exceed 1.2:

Packing Group II	Packing Group III
0,6 m	0,4 m

(ii) where the substances to be carried have a relative density (d) exceeding 1.2 the drop height shall be calculated on the basis of the relative density (d) of the substance to be carried, rounded up to the first decimal place, as follows:

Packing Group II	Packing Group III
d × 0,5 (m)	d × 0,33 (m)

6.1.5.3.5. Criteria for passing the test

6.1.5.3.5.1. Each packaging containing liquid shall be leakproof when equilibrium has been reached between the internal and external pressures, except for inner packagings of combination packagings and except for inner receptacles of composite packagings (glass, porcelain or stoneware), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii) when it is not necessary that the pressures be equalized.

6.1.5.3.5.2. Where a packaging for solids undergoes a drop test and its upper face strikes the target, the test sample passes the test if the entire contents are retained by an inner packaging or inner receptacle (e.g. a plastics bag), even if the closure is no longer sift-proof.

6.1.5.3.5.3. The packaging or outer packaging of a composite or combination packaging shall not exhibit any damage liable to affect safety during carriage. There shall be no leakage of the filling substance from the inner receptacle or inner packaging(s).

6.1.5.3.5.4. Neither the outermost ply of a bag nor an outer packaging may exhibit any damage liable to affect safety during carriage.

6.1.5.3.5.5. A slight discharge from the closure(s) upon impact is not considered to be a failure of the packaging provided that no further leakage occurs.

6.1.5.3.5.6. No rupture is permitted in packagings for goods of Class 1 which would permit the spillage of loose explosive substances or articles from the outer packaging.

6.1.5.4. Leakproofness test

The leakproofness test shall be performed on all design types of packagings intended to contain liquids; however, this test is not required for

— inner packagings of combination packagings;

— inner receptacles of composite packagings (glass, porcelain or stoneware), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii);

— removable head light gauge metal packagings, marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii) intended for substances with a viscosity at 23 °C exceeding 200 mm^2/s.

6.1.5.4.1. Number of test samples: three test samples per design type and manufacturer.

6.1.5.4.2. Special preparation of test samples for the test: either vented closures shall be replaced by similar non-vented closures or the vent shall be sealed.

6.1.5.4.3. Test method and pressure to be applied: the packagings including their closures shall be restrained under water for 5 minutes while an internal air pressure is applied, the method of restraint shall not affect the results of the test.

The air pressure (gauge) to be applied shall be:

Packing Group I	Packing Group II	Packing Group III
Not less than 30 kPa (0,3 bar)	Not less than 20 kPa (0,2 bar)	Not less than kPa (0,2 bar)

Other methods at least equally effective may be used.

6.1.5.4.4. Criterion for passing the test:

there shall be no leakage.

6.1.5.5. Internal pressure (hydraulic) test

6.1.5.5.1. Packagings to be tested

The internal pressure (hydraulic) test shall be carried out on all design types of metal, plastics and composite packagings intended to contain liquids. This test is not required for:

— inner packagings of combination packagings;

— inner receptacles of composite packagings (glass, porcelain or stoneware), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii);

— removable head light gauge metal packagings, marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii) intended for substances with a viscosity at 23 °C exceeding 200 mm^2/s.

6.1.5.5.2. Number of test samples: three test samples per design type and manufacturer.

6.1.5.5.3. Special preparation of packagings for testing: either vented closures shall be replaced by similar non-vented closures or the vent shall be sealed.

6.1.5.5.4. Test method and pressure to be applied: metal packagings and composite packagings (glass, porcelain or stoneware), including their closures, shall be subjected to the test pressure for 5 minutes. Plastics packagings and composite packagings (plastics material) including their closures shall be subjected to the test pressure for 30 minutes. This pressure is the one to be included in the marking required by 6.1.3.1 (d). The manner in which the packagings are supported shall not invalidate the test. The test pressure shall be applied continuously and evenly; it shall be kept constant throughout the test period. The hydraulic pressure (gauge) applied, as determined by any one of the following methods, shall be:

(a) not less than the total gauge pressure measured in the packaging (i.e. the vapour pressure of the filling substance and the partial pressure of the air or other inert gases, minus 100 kPa) at 55 °C, multiplied by a safety factor of 1.5; this total gauge pressure shall be determined on the basis of a maximum degree of filling in accordance with 4.1.1.4 and a filling temperature of 15 °C; or

(b) not less than 1.75 times the vapour pressure at 50 °C of the substance to be carried, minus 100 kPa but with a minimum test pressure of 100 kPa; or

(c) not less than 1.5 times the vapour pressure at 55 °C of the substance to be carried, minus 100 kPa but with a minimum test pressure of 100 kPa.

6.1.5.5.5. In addition, packagings intended to contain substances of Packing Group I shall be tested to a minimum test pressure of 250 kPa (gauge) for a test period of 5 or 30 minutes depending upon the material of construction of the packaging.

6.1.5.5.6. Criterion for passing the test: no packaging may leak.

6.1.5.6. Stacking test

All design types of packagings other than bags and other than non-stackable composite packagings (glass, porcelain, or stoneware), marked with the symbol 'RID/ADR' according to 6.1.3.1 (a) (ii) shall be subjected to a stacking test.

6.1.5.6.1. Number of test samples: three test samples per design type and manufacturer.

6.1.5.6.2. Test method: the test sample shall be subjected to a force applied to the top surface of the test sample equivalent to the total weight of identical packages which might be stacked on it during carriage; where the contents of the test sample are non-dangerous liquids with relative density different from that of the liquid to be carried, the force shall be calculated in relation to the latter. The minimum height of the stack including the test sample shall be 3 metres. The duration of the test shall be 24 hours except that plastics drums, jerricans, and composite packagings 6HH1 and 6HH2 intended for liquids shall be subjected to the stacking test for a period of 28 days at a temperature of not less than 40 °C.

For the test in accordance with 6.1.5.2.5, the original filling substance shall be used. For the test in accordance with 6.1.5.2.6, a stacking test shall be carried out with a standard liquid.

6.1.5.6.3. Criteria for passing the test: no test sample shall leak. In composite packagings or combination packagings, there shall be no leakage of the filling substance from the inner receptacle or inner packaging. No test sample shall show any deterioration which could adversely affect transport safety or any distortion liable to reduce its strength or cause instability in stacks of packages. Plastics packagings shall be cooled to ambient temperature before the assessment.

6.1.5.7. Cooperage test for bung type wooden barrels

6.1.5.7.1. Number of samples: one barrel.

6.1.5.7.2. Method of testing: remove all hoops above the bilge of an empty barrel at least two days old.

6.1.5.7.3. Criterion for passing test: the diameter of the cross section of the upper part of the barrel shall not increase by more than 10 %.

6.1.5.8. Supplementary permeability test for plastics drums and jerricans in accordance with 6.1.4.8 and for composite packagings (plastics material) in accordance with 6.1.4.19 intended for the carriage of liquids having a flash-point ≤ 61 °C, other than 6HA1 packagings

Polyethylene packagings need be subjected to this test only if they are to be approved for the carriage of benzene, toluene, xylene or mixtures and preparations containing those substances.

6.1.5.8.1. Number of test samples: three packagings per design type and manufacturer.

6.1.5.8.2. Special preparation of the test sample for the test:

the test samples are to be pre-stored with the original filling substance in accordance with 6.1.5.2.5, or, for high molecular mass polyethylene packagings, with the standard liquid mixture of hydrocarbons (white spirit) in accordance with 6.1.5.2.6.

6.1.5.8.3. Test method:

the test samples filled with the substance for which the packaging is to be approved shall be weighed before and after storage for 28 days at 23 °C and 50 % relative atmospheric humidity. For high molecular mass polyethylene packagings, the test may be carried out with the standard liquid mixture of hydrocarbons (white spirit) in place of benzene, toluene or xylene.

6.1.5.8.4. Criterion for passing the test:

permeability shall not exceed 0,008 g/l.h

6.1.5.9. Test Report

6.1.5.9.1. A test report containing at least the following particulars shall be drawn up and shall be available to the users of the packaging:

1. Name and address of the test facility;
2. Name and address of applicant (where appropriate);
3. A unique test report identification;
4. Date of the test report;
5. Manufacturer of the packaging;
6. Description of the packaging design type (e.g. dimensions, materials, closures, thickness, etc.), including method of manufacture (e.g. blow moulding) and which may include drawing(s) and/or photograph(s);
7. Maximum capacity;
8. Characteristics of test contents, e.g. viscosity and relative density for liquids and particle size for solids;
9. Test descriptions and results;
10. The test report shall be signed with the name and status of the signatory.

6.1.5.9.2. The test report shall contain statements that the packaging prepared as for carriage was tested in accordance with the appropriate requirements of this section and that the use of other packaging methods or components may render it invalid. A copy of the test report shall be available to the competent authority.

6.1.6. *Standard liquids for verifying the chemical compatibility of high or average molecular mass polyethylene packagings in accordance with 6.1.5.2.6 and list of substances to which the standard liquids may be regarded as equivalents*

6.1.6.1. Standard liquids for verifying the chemical compatibility of high or average molecular mass polyethylene packagings in accordance with 6.1.5.2.6

The following standard liquids shall be used for this plastics material.

(a) *Wetting Solution* for substances causing severe cracking in polyethylene under stress, in particular for all solutions and preparations containing wetting agents.

An aqueous solution of 1 to 10 % of a wetting agent shall be used. The surface tension of this solution shall be 31 to 35 mN/m at 23 °C.

The stacking test shall be carried out on the basis of a relative density of not less than 1.20.

A compatibility test with acetic acid is not required if adequate chemical compatibility is proved with a wetting solution.

For filling substances causing cracking in polyethylene under stress which is resistant to the wetting solution, adequate chemical compatibility may be proved after preliminary storing for three weeks at 40 °C in accordance with 6.1.5.2.6, but with the original filling matter.

(b) *Acetic acid* for substances and preparations causing cracking in polyethylene under stress, in particular for monocarboxylic acids and monovalent alcohols.

Acetic acid in 98 to 100 % concentration shall be used. Relative density = 1,05.

The stacking test shall be carried out on the basis of a relative density not less than 1,1.

In the case of filling substances causing polyethylene to swell more than acetic acid and to such an extent that the polyethylene mass is increased by up to 4 %, adequate chemical compatibility may be proved after preliminary storing for three weeks at 40 °C, in accordance with 6.1.5.2.6 but with the original filling matter.

(c) *Normal butyl acetate/normal butyl acetate-saturated wetting solution* for substances and preparations causing polyethylene to swell to such an extent that the polyethylene mass is increased by about 4 % and at the same time causing cracking under stress, in particular for phyto-sanitary products, liquid paints and esters. Normal butyl acetate in 98 to 100 % concentration shall be used for preliminary storage in accordance with 6.1.5.2.6.

For the stacking test in accordance with 6.1.5.6, a test liquid consisting of a 1 to 10 % aqueous wetting solution mixed with 2 % normal butyl acetate conforming to (a) above shall be used.

The stacking test shall be carried out on the basis of a relative density not less than 1,0.

In the case of filling substances causing polyethylene to swell more than normal butyl acetate and to such an extent that the polyethylene mass is increased by up to 7,5 %, adequate chemical compatibility may be proved after preliminary storing for three weeks at 40 °C, in accordance with 6.1.5.2.6 but with the original filling matter.

(d) *Mixture of hydrocarbons (white spirit)* for substances and preparations causing polyethylene to swell, in particular for hydrocarbons, certain esters and ketones.

A mixture of hydrocarbons having a boiling range 160 °C to 220 °C, relative density 0,78–0,80, flash-point > 50 °C and an aromatic content 16 % to 21 % (C_9 and higher aromatics only) shall be used.

The stacking test shall be carried out on the basis of a relative density not less than 1,0.

In the case of filling substances causing polyethylene to swell to such an extent that the polyethylene mass is increased by more than 7,5 %, adequate chemical compatibility may be proved after preliminary storing for three weeks at 40 °C, in accordance with 6.1.5.2.6 but with the original filling matter.

(e) *Nitric acid* for all substances and preparations having an oxidizing effect on polyethylene and causing molecular degradation identical to or less than 55 % nitric acid.

Nitric acid in a concentration of not less than 55 % shall be used.

The stacking test shall be carried out on the basis of a relative density of not less than 1,4.

In the case of filling substances more strongly oxidizing than 55 % nitric acid or causing degradation of the molecular mass proceed in accordance with 6.1.5.2.5.

The period of use shall be determined in such cases by observing the degree of damage (e.g. two years for nitric acid in not less than 55 % concentration).

(f) *Water* for substances which do not attack polyethylene in any of the cases referred to under (a) to (e), in particular for inorganic acids and lyes, aqueous saline solutions, polyvalent alcohols and organic substances in aqueous solution.

The stacking test shall be carried out on the basis of a relative density of not less than 1,2.

6.1.6.2. List of substances to which the standard liquids may be regarded as equivalents for the purposes of 6.1.5.2.6

Class 3

Substance	Standard Liquid
Flammable liquids of packing group II, without subsidiary risk (classification code F1, packing group II)	
Substances having a vapour pressure at 50 °C of not more than 110 kPa (1,1 bar)	
— Crude petroleum and other crude oils	Mixture of hydrocarbons
— Hydrocarbons	Mixture of hydrocarbons
— Halogenated substances	Mixture of hydrocarbons
— Alcohols	Acetic acid
— Ethers	Mixture of hydrocarbons
— Aldehydes	Mixture of hydrocarbons
— Ketones	Mixture of hydrocarbons
— Esters	Normal butyl acetate where the swelling effect is up to 4 % (mass): other cases, mixture of hydrocarbons
Mixtures of abovementioned substances having a boiling point or initial boiling point exceeding 35 °C, containing not more than 55 % nitrocellulose with a nitrogen content not exceeding 12,6 % (UN No. 2059).	Normal butyl acetate/normal butyl acetate-saturated wetting solution and mixture of hydrocarbons
Viscous substances that meet the classification criteria of 2.2.3.1.4	Mixture of hydrocarbons
Flammable liquids of packing group II, toxic (classification code FT1, packing group II)	
Methanol (UN 1230)	Acetic acid
Flammable liquids of packing group III, without subsidiary risk (classification code F1, packing group III)	
— Petroleum, solvent naphtha	Mixture of hydrocarbons
— White spirit (turpentine substitute)	Mixture of hydrocarbons
— Hydrocarbons	Mixture of hydrocarbons
— Halogenated substances	Mixture of hydrocarbons
— Alcohols	Acetic acid
— Ethers	Mixture of hydrocarbons
— Aldehydes	Mixture of hydrocarbons
— Ketones	Mixture of hydrocarbons
— Esters	Esters Normal butyl acetate where the swelling effect is up to 4 % (mass): other cases, mixture of hydrocarbons
— Nitrogenous substances	Mixture of hydrocarbons
Mixtures of abovementioned substances containing not more than 55 % nitrocellulose with a nitrogen content not exceeding 12,6 % (UN No. 2059).	Normal butyl acetate/normal butyl acetate-saturated wetting solution and mixture of hydrocarbons

Class 5.1

Substance	Standard Liquid
Oxidizing liquids, corrosive (classification code OC1)	
Hydrogen peroxides, aqueous solutions with not less than 20 % but not more than 60 % hydrogen peroxide (UN No. 2014) ([1])	Water
Perchloric acid with more than 50 % but not more than 72 % acid (mass) (UN No. 1873)	Nitric acid
Oxidizing substances, without subsidiary risk (classification code O1)	
Hydrogen peroxide, aqueous solutions with not less than 8 % but less than 20 % hydrogen peroxide (UN No. 2984) ([1])	Water
Calcium chlorate solution (UN No. 2429)	Water
Potassium chlorate solution (UN No. 2427)	Water
Sodium chlorate solution (UN No. 2428)	Water

([1]) Test to be carried out only with vent.

Class 5.2

Substance	Standard Liquid
NOTE: tert-butyl hydroperoxide with more than 40 % peroxide content and peroxyacetic acids are excluded.	
All organic peroxides in a technically pure form or in solution in solvents which, as far as their compatibility is concerned, are covered by the standard liquid 'mixture of hydrocarbons' in this list (UN Nos. 3101, 3103, 3105, 3107, 3109, 3111, 3113, 3115, 3117, 3119)	Normal butyl acetate/wetting solution with 2 % normal butyl acetate and mixture of hydrocarbons and nitric acid at 55 %

Compatibility of vents and gaskets with organic peroxides may be verified, also independently of the design type test, by laboratory tests with nitric acid.

Class 6.1

Substance	Standard Liquid
Toxic organic liquids without subsidiary risk (classification code T1)	
Aniline (UN No. 1547)	Acetic acid
Furfuryl alcohol (UN No. 2874)	Acetic acid
Phenol solution (UN No. 2821, packing group III)	Acetic acid
Toxic organic liquids, corrosive (classification code TC1)	
Cresols (UN No. 2076) or cresylic acid (UN No. 2022)	Acetic acid

Class 6.2

Substance	Standard Liquid
All infectious substances (UN Nos. 2814 and 2900, risk group 2, and UN No. 3291) considered to be liquids in accordance with 2.1.2.6	Water

Class 8

Substance	Standard Liquid
Corrosive acid inorganic liquids, without subsidiary risk (classification code C1)	
Sulphuric acid (UN Nos. 1830 and 2796)	Water
Sulphuric acid, spent (UN No. 1832)	Water
Nitric acid (UN No. 2031) with not more than 55 % acid	Nitric acid
Perchloric acid with not more than 50 % acid, by mass in aqueous solution (UN No. 1802)	Nitric acid
Hydrochloric acid (UN No. 1789) with not more than 36 % pure acid	Water
Hydrobromic acid (UN No. 1788)	Water
Hydriodic acid (UN 1787)	Water
Hydrofluoric acid (UN No. 1790) with not more than 60 % hydrogen fluoride ([1])	Water
Fluoroboric acid (UN No. 1775) with not more than 50 % pure acid	Water
Fluorosilicic acid (UN No. 1778)	Water
Chromic acid solution (UN No. 1755) with not more than 30 % pure acid	Nitric acid
Phosphoric acid (UN No. 1805)	Water
Corrosive acid organic liquids (classification code C3)	
Acrylic acid (UN No. 2218)	Acetic acid
Formic acid (UN No. 1779)	Acetic acid
Acetic acid (UN Nos. 2789 and 2790)	Acetic acid
Thioglycolic acid (UN No. 1940)	Acetic acid
Methacrylic acid (UN No. 2531)	Acetic acid
Propionic acid (UN No. 1848)	Acetic acid
Alkylphenols, liquid, n.o.s. (UN No. 3145, packing group III)	Acetic acid
Corrosive basic inorganic liquids, without subsidiary risk (classification code C5)	
Sodium hydroxide solution (UN No. 1824)	Water
Potassium hydroxide solution (UN No. 1814)	Water
Ammonia solution (UN No. 2672)	Water
Hydrazine, aqueous solution with not less than 37 % but not more than 64 % hydrazine, by mass (UN No. 2030)	Water
Other corrosive liquids (classification code C9)	
Chlorite solution (UN No. 1908) and hypochlorite solution ([2]) (UN 1791, packing group III)	Nitric acid
Formaldehyde solutions (UN No. 2209)	Water

([1]) Maximum 60 litres; permissible period of use two years.
([2]) Test to be carried out only with vent. If the test is carried out with nitric acid as the standard liquid, an acid-resistant vent and gasket shall be used. For hypochlorite solutions, vents and gaskets of the same design type, resistant to hypochlorite (e.g. of silicone rubber) but not resistant to nitric acid, are also permitted.

CHAPTER 6.2

Requirements for the construction and testing of receptacles for gases, aerosols and small receptacles containing gas (gas cartridges)

6.2.1. *General requirements for receptacles for gases*

NOTE: For aerosols and small receptacles containing gas (gas cartridges) see 6.2.4

6.2.1.1. Design and construction

6.2.1.1.1. Receptacles and their closures shall be designed, calculated, manufactured, tested and equipped in such a way as to withstand all conditions to which they will be subjected during their normal use and during normal transport conditions.

In the design of pressure receptacles, all relevant factors shall be taken into account such as:

— internal pressure;

— ambient and operational temperatures, including during transport;

— dynamic loads.

Normally the wall thickness shall be determined by calculation, accompanied, if needed, by experimental stress analysis. The wall thickness may be determined by experimental means.

Appropriate design calculations for the pressure envelope and supporting components shall be used to ensure the safety of the receptacles concerned.

The minimum wall thickness to withstand pressure shall be calculated in particular with regard to:

— the calculation pressures, which shall not be less than the test pressure;

— the calculation temperatures allowing for appropriate safety margins;

— the maximum stresses and peak stress concentrations where necessary;

— factors inherent to the properties of the material.

The test pressure of receptacles is prescribed in Packing Instruction P200 in 4.1.4.1 for cylinders, tubes, pressure drums and bundles of cylinders. The test pressure for cryogenic receptacles, closed, shall not be less than 1,3 times the maximum working pressure increased by 1 bar for vacuum insulated receptacles.

Material characteristics to be considered are, when applicable:

— yield stress;

— tensile strength;

— time-dependent strength;

— fatigue data;

— Young's modulus (modulus of elasticity);

— appropriate amount of plastic strain;

— impact strength;

— fracture resistance.

6.2.1.1.2. Receptacles for UN No. 1001, dissolved acetylene, shall be filled entirely with a porous material, uniformly distributed, of a type approved by the competent authority and which:

(a) does not attack the receptacles or form harmful or dangerous compounds either with the acetylene or with the solvent;

(b) is capable of preventing the spread of decomposition of the acetylene in the mass.

The solvent shall not attack the receptacles.

6.2.1.2. Materials of receptacles

The materials of which the receptacles and their closures are made as well as all substances that might come into contact with the contents shall not be liable to attack from the contents or form harmful or dangerous compounds therewith.

The following materials may be used:

(a) carbon steel for compressed, liquefied, refrigerated liquefied gases and gases dissolved under pressure;

(b) alloy steel (special steels), nickel, nickel alloy (such as monel) for compressed, liquefied, refrigerated liquefied gases and gases dissolved under pressure;

(c) copper for:

(i) gases of classification codes lA, lO, lF and lTF, whose filling pressure referred to a temperature of 15° C does not exceed 2 MPa (20 bar);

(ii) gases of classification code 2A; and also UN 1033 dimethyl ether; UN 1037 ethyl chloride; UN 1063 methyl chloride; UN 1079 sulphur dioxide; UN 1085 vinyl bromide; UN 1086 vinyl chloride; and UN 3300 ethylene oxide and carbon dioxide mixture with more than 87 % ethylene oxide;

(iii) gases of classification codes 3A, 3O and 3F;

(d) aluminium alloy: see special requirement 'a' of Packing Instruction P200 (12) in 4.1.4.1;

(e) composite material for compressed, liquefied, refrigerated liquefied gases and gases dissolved under pressure;

(f) synthetic materials for refrigerated liquefied gases;

(g) glass for gases of classification code 3A other than UN 2187 carbon dioxide, refrigerated liquid or mixtures thereof, and gases of classification code 3O.

6.2.1.3. Service equipment

6.2.1.3.1. Openings

Apart from a manhole which, if provided, shall be closed by an effective closure and apart from the necessary orifice for the removal of deposits, pressure drums shall not be equipped with more than two openings, one for filling and one for discharge.

Cylinders and pressure drums intended for the carriage of gases of classification code 2F may be provided with other openings intended in particular for verifying the level of the liquid and the gauge pressure.

6.2.1.3.2. Fittings

(a) If cylinders are fitted with a device to prevent rolling, this device shall not be integral with the valve cap;

(b) Pressure drums which are capable of being rolled shall be equipped with rolling hoops or be otherwise protected against damage due to rolling (e.g. by corrosion resistant metal sprayed on to the receptacle surface);

(c) Pressure drums and cryogenic receptacles, which are not capable of being rolled, shall be fitted with devices (skids, rings, straps,) ensuring that they can be safely handled by mechanical means and so arranged as not to impair the strength of, nor cause undue stresses in, the wall of the receptacle;

(d) Bundles of cylinders shall be fitted with appropriate devices ensuring that they can be handled and carried safely. The manifold shall have at least the same test pressure as the cylinders. The manifold and the master cock shall be situated so as to be protected against any damage.

6.2.1.3.3. Safety valves

Cryogenic receptacles, closed, shall be fitted with one or more pressure relief devices to protect the vessel against excess pressure. Excess pressure means a pressure in excess of 110 % of the maximum working pressure due to normal heat leak or in excess of the test pressure due to the loss of vacuum for vacuum insulated receptacles or due to the failure in the open position of a pressure build up system.

6.2.1.4. Approval of receptacles

6.2.1.4.1. The conformity of receptacles, having a test pressure capacity product of more than 150 MPa/litre (1 500 bar/litre) with the provisions of Class 2, shall be assessed by one of the following methods:

(a) Single receptacles shall be examined, tested and approved by a testing and certifying body approved by the competent authority of the country of approval ([1]), on the basis of the technical documentation and declaration of the manufacturer on compliance with the relevant provisions of Class 2.

The technical documentation shall include full specifications on design and construction, and full documentation on the manufacturing and testing; or

(b) The construction of the receptacles shall be tested and approved by a testing and certifying body approved by the competent authority of the country of approval ([1]) on the basis of the technical documentation with regard to their compliance with the relevant provisions of Class 2.

Receptacles shall furthermore be designed, manufactured and tested according to a comprehensive quality assurance programme for design, manufacture, final inspection and testing. The quality assurance programme shall guarantee the conformity of the receptacles with the relevant provisions of Class 2 and shall be approved and supervised by a testing and certifying body approved by the competent authority of the country of approval ([1]); or

(c) The design type of the receptacles shall be approved by a testing and certifying body approved by the competent authority of the country of approval ([1]). Any receptacle of this design shall be manufactured and tested according to a quality assurance programme for production, final inspection and testing, which shall be approved and supervised by a testing and certifying body approved by the competent authority of the country of approval ([1]); or

(d) The design type of the receptacles shall be approved by a testing and certifying body approved by the competent authority of the country of approval ([1]). Any receptacle of this design shall be tested under the supervision of a testing and certifying body approved by the competent authority of the country of approval ([1]) on the basis of a declaration of the manufacturer on compliance with the approved design and the relevant provisions of Class 2.

6.2.1.4.2. The conformity of receptacles having a test pressure capacity product of more than 30 MPa.litre (300 bar/litre) and not more than 150 MPa/litre (1 500 bar/litre) with the provisions of Class 2 shall be assessed by one of the methods described in 6.2.1.4.1 or by one of the following methods:

(a) The receptacles shall be designed, manufactured and tested according to a comprehensive quality assurance programme for their design, manufacture, final inspection and testing, approved and supervised by a testing and certifying body approved by the competent authority of the country of approval ([1]); or

(b) The design type of the receptacle shall be approved by a testing and certifying body approved by the competent authority of the country of approval ([1]). The compliance of any receptacle with the approved design shall be declared in writing by the manufacturer on the basis of his quality assurance programme for final inspection and testing of receptacles, approved and supervised by a testing and certifying body approved by the competent authority of the country of approval ([1]); or

(c) The design type of the receptacle shall be approved by a testing and certifying body approved by the competent authority of the country of approval ([1]). The compliance of any receptacle with the approved design shall be declared in writing by the manufacturer and all receptacles of this type shall be tested under the supervision of a testing and certifying body approved by the competent authority of the country of approval ([1]).

6.2.1.4.3. The conformity of receptacles, having a test pressure capacity product of not more than 30 MPa/litre (300 bar/litre) with the provisions for Class 2 shall be assessed by one of the methods described in 6.2.1.4.1 or 6.2.1.4.2 or by one of the following methods:

(a) The compliance of any receptacle with a design, fully specified in technical documentation, shall be declared in writing by the manufacturer and receptacles of this design shall be tested under the supervision of a testing and certifying body approved by the competent authority of the country of approval ([1]); or

(b) The design type of the receptacles shall be approved by a testing and certifying body approved by the competent authority of the country of approval ([1]). The compliance of all receptacles with the approved design shall be declared in writing by the manufacturer and all receptacles of this type shall be tested individually.

([1]) If the country of approval is not a contracting party to RID/ADR, the competent authority of a country party to RID/ADR.

6.2.1.4.4. The requirements of 6.2.1.4.1 to 6.2.1.4.3 shall be deemed to be complied with:

(a) as regards the quality assurance systems mentioned in 6.2.1.4.1 and 6.2.1.4.2, if they conform to the relevant European Standard of the EN ISO 9000 series;

(b) in their entirety, if the relevant conformity assessment procedures of Council Directive 99/36/EC ([1]) have been complied with as follows:

(i) for the receptacles listed under 6.2.1.4.1 the modules G, or H1, or B in combination with D, or B in combination with F;

(ii) for the receptacles listed under 6.2.1.4.2 the modules H, or B in combination with E, or B in combination with C1, or B1 in combination with F, or B1 in combination with D;

(iii) for the receptacles listed under 6.2.1.4.3 the modules A1, or D1, or E1.

6.2.1.4.5. Requirements for manufacturers

The manufacturer shall be technically competent and shall possess all suitable means required for the satisfactory manufacture of receptacles; this relates in particular to qualified personnel

(a) to supervise the entire manufacturing process;

(b) to carry out joining of materials;

(c) to carry out the relevant tests.

The proficiency test of a manufacturer shall in all instances be carried out by a testing and certifying body approved by the competent authority of the country of approval ([2]). The particular certification process the manufacturer intends to apply shall be taken into consideration.

6.2.1.4.6. Requirements for testing and certifying bodies

Testing and certifying bodies shall be independent from manufacturing enterprises and technologically competent to the degree required. These requirements shall be deemed to be met if the bodies have been approved on the basis of an accreditation procedure in accordance with the relevant European standards of series EN 45000.

6.2.1.5. Initial inspection

6.2.1.5.1. Receptacles shall be subjected to initial inspection in accordance with the following specifications:

On an adequate sample of receptacles:

(a) Testing of the material of construction in respect at least of yield stress, tensile strength, and permanent elongation at fracture;

(b) Measurement of wall thickness at the thinnest point, and calculation of the stress;

(c) Checking the homogeneity of the material for each manufacturing batch, and inspection of the external and internal condition of the receptacles;

For all receptacles:

(d) A hydraulic pressure test. Receptacles shall withstand the test pressure without undergoing permanent deformation or exhibiting cracks;

NOTE: With the agreement of the testing and certifying body approved by the competent authority of the country of approval ([2]), the hydraulic pressure test may be replaced by a test using a gas, where such operation does not entail any danger.

(e) An inspection of the markings on the receptacles, see 6.2.1.7;

(f) In addition, receptacles intended for the carriage of UN 1001 acetylene, dissolved, shall have an inspection of the nature of the porous material and the quantity of solvent.

6.2.1.5.2. Specific provisions applying to aluminium alloy receptacles

(a) In addition to the initial test required by 6.2.1.5.1, it is necessary to test for possible intercrystalline corrosion of the inside wall of the receptacles where use is made of an aluminium alloy containing copper, or where use is made of an aluminium alloy containing magnesium or manganese and the magnesium content is greater than 3,5 % or the manganese content lower than 0,5 %.

([1]) Council Directive 99/36/EC concerning transportable pressure equipment (Official Journal of the European Communities, OJ L 138, 1.6.1999).
([2]) If the country of approval is not a COTIF member state or contracting party of ADR, the competent authority of a COTIF member state or contracting party of ADR.

(b) In the case of an aluminium/copper alloy the test shall be carried out by the manufacturer at the time of approval of a new alloy by the competent authority; it shall thereafter be repeated in the course of production, for each pour of the alloy.

(c) In the case of an aluminium/magnesium alloy the test shall be carried out by the manufacturer at the time of approval of a new alloy and of the manufacturing process by the competent authority. The test shall be repeated whenever a change is made in the composition of the alloy or in the manufacturing process.

6.2.1.6. Periodic inspection

6.2.1.6.1. Refillable receptacles shall be subjected to periodic inspections under the supervision of a testing and certifying body approved by the competent authority of the country of approval ([1]), in accordance with the periodicities defined in the relevant packing instruction (P200 or P203 in 4.1.4.1) and in accordance with the following specifications:

(a) External check of the receptacle, the equipment and the markings;

(b) Internal check of the receptacle (e.g. by weighing, internal inspection of its condition, checks of wall thickness);

(c) The hydraulic pressure test and, if necessary, inspection of the characteristics of the material by suitable tests;

NOTES:

1. With the agreement of the testing and certifying body approved by the competent authority of the country of approval ([1]), the hydraulic pressure test may be replaced by a test using a gas, where such operation does not entail any danger, or by an equivalent method based on ultrasound.

2. With the agreement of the testing and certifying body approved by the competent authority of the country of approval ([1]), the hydraulic pressure test of cylinders and tubes may be replaced by an equivalent method based on acoustic emission.

3. With the agreement of the testing and certifying body approved by the competent authority of the country of approval ([1]), the hydraulic pressure test of each welded steel cylinder intended for the carriage of gases, UN 1965 hydrocarbon gas mixture, liquefied, n.o.s., with a capacity below 6,5 litres may be replaced by another test ensuring an equivalent level of safety.

6.2.1.6.2. For receptacles intended for the carriage of UN 1001 acetylene, dissolved, only the external condition (corrosion, deformation) and the condition of the porous mass (loosening, settlement) shall be examined.

6.2.1.6.3. By derogation from 6.2.1.6.1(c) closed cryogenic receptacles shall be subjected to external inspection and to a leakproofness test. The leakproofness test shall be carried out with the gas contained in the receptacle or with an inert gas. Checking shall be performed by means of a pressure gauge or by vacuum measurement. The thermal insulation need not be removed.

6.2.1.7. Marking of receptacles

6.2.1.7.1. Refillable receptacles shall bear the following particulars in clearly legible and durable characters:

(a) The name or the mark of the manufacturer;

(b) The approval number (if the design type of the receptacle is approved according to 6.2.1.4);

(c) The serial or filling number of the receptacle provided by the manufacturer;

(d) The tare of the receptacle without fittings and accessories, when the check of wall thickness required during the periodic inspection is performed by weighing;

(e) The test pressure (gauge pressure);

(f) The date (month and year) of the initial inspection and the most recent periodic inspection;

NOTE: The month need not be indicated for gases for which the interval between periodic inspections is 10 years or more (see 4.1.4.1 Packing Instructions P200 (9) and P203 (8)).

(g) The stamp of the expert who carried out the tests and inspections;

(h) In the case of UN 1001 acetylene, dissolved: the permitted filling pressure (see 4.1.4.1, Packing Instruction P200 (6)) and the total of the mass of: the empty receptacle, the fittings and accessories, the porous mass and the solvent;

([1]) If the country of approval is not a Member State or contracting party of ADR, the competent authority of a Member State or contracting party of ADR.

(i) The water capacity in litres;

(j) For compressed gases filled by pressure, the maximum filling pressure at 15 °C allowed for the receptacle;

These marks shall be immovably affixed, e.g. engraved, either on a reinforced part of the receptacle, on a ring, or on immovably affixed attachments.

They can also be engraved on the receptacle directly, provided it can be demonstrated that the strength of the receptacle is not impaired by the marking.

NOTE: See also 5.2.1.6

6.2.1.7.2. Non-refillable receptacles shall bear the following particulars in clearly legible and durable characters:

(a) The name or the mark of the manufacturer;

(b) The approval number (if the design type of the receptacle is approved according to 6.2.1.4);

(c) The serial or batch number of the receptacle provided by the manufacturer;

(d) The test pressure;

(e) The date (month and year) of manufacture;

(f) The stamp of the expert who carried out the initial inspection;

(g) The UN number and the proper shipping name of the gas or gas mixture as determined in accordance with Chapter 3.1;

In the case of gases classified under an n.o.s. entry, only the UN number and the technical name [1] of the gas have to be indicated;

In the case of mixtures, not more than the two constituents which most predominantly contribute to the hazards have to be indicated;

(h) The words 'DO NOT REFILL'; this marking shall be a minimum of 6 mm in height.

The marks mentioned in this paragraph, other than (g), shall be immovably affixed, e.g. engraved, either on a reinforced part of the receptacle, on a ring, or on immovably affixed attachments.

They can also be engraved on the receptacle directly, provided it can be demonstrated that the strength of the receptacle is not impaired by the marking.

6.2.2. *Receptacles designed, constructed and tested according to standards*

The requirements of 6.2.1 are considered to have been complied with if the following standards, as relevant, are applied:

Reference	Title of document	Applicable sections
	FOR MATERIALS	
EN 1797-1:1998	Cryogenic vessels-Gas/material compatibility-Part 1: Oxygen compatibility	6.2.1.2
EN ISO 11114-1:1997	Portable gas cylinders — Compatibility of cylinder and valve materials with gas contents-Part 1: Metallic materials	6.2.1.2
EN ISO 11114-2:2000	Portable gas cylinders — Compatibility of cylinder and valve materials with gas contents-Part 2: Non-metallic materials	6.2.1.2
EN 1252-1:1998	Cryogenic vessels-Materials-Part 1: Toughness requirements for temperatures below −80 °C	6.2.1.2

[1] Instead of the technical name the use of one of the following names is permitted:
— For UN 1078 refrigerant gas, n.o.s.: mixture F1, mixture F2, mixture F3;
— For UN 1060 methylacetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;
— For UN 1965 hydrocarbon gas mixture, liquefied, n.o.s.: mixture A or butane, mixture A01 or butane, mixture A02 or butane, mixture A0 or butane, mixture A1, mixture B1, mixture B2, mixture B, mixture C or propane.

Reference	Title of document	Applicable sections
FOR CYLINDERS		
Annex I, Parts 1 to 3 to 84/525/EEC	Council Directive of 17 September 1984 on the approximation of the laws of the Member States relating to seamless steel gas cylinders, published in the Official Journal of the European Communities, OJ L 300, 19.11.1984.	6.2.1.1 and 6.2.1.5
Annex I, Parts 1 to 3 to 84/526/EEC	Council Directive of 17 September 1984 on the approximation of the laws of the Member States relating to seamless, unalloyed aluminium and aluminium alloy gas cylinders, published in the Official Journal of the European Communities, OJ L 300, 19.11.1984.	6.2.1.1 and 6.2.1.5
Annex I, Parts 1 to 3 to 84/527/EEC	Council Directive of 17 September 1984 on the approximation of the laws of the Member States relating to welded unalloyed steel gas cylinders, published in the Official Journal of the European Communities, OJ L 300, 19.11.1984.	6.2.1.1 and 6.2.1.5
EN 1442:1998	Transportable refillable welded steel cylinders for LPG — Design and construction	6.2.1.1, 6.2.1.5, 6.2.1.7
EN 1800:1998	Acetylene cylinders- Basic requirements and definitions	6.2.1.1.2
EN 1964-1:1999	Transportable gas cylinders-Specification for the design and construction of refillable transportable seamless steel gas cylinders of capacity from 0,5 litre up to 150 litres — Part 1: seamless steel cylinders with an Rm value less than 1 100 MPa	6.2.1.1 and 6.2.1.5
EN 1975:1999 except Annex G	Transportable gas cylinders — Specification for the design and construction of refillable transportable seamless aluminium and aluminium alloy gas cylinders of capacity 0,5 litre up to 150 litres	6.2.1.1 and 6.2.1.5
EN ISO 11120:1999	Transportable gas cylinders. Seamless refillable steel tubes for the transport of compressed gases, of a capacity between 150 litres and 3 000 litres — design, construction and testing	6.2.1.1 and 6.2.1.5
EN 1964-3:2000	Transportable gas cylinders-Specification for the design and construction of refillable transportable seamless steel gas cylinders of capacity from 0,5 litre up to 150 litre — Part 3: Seamless cylinders made of stainless steel with an Rm value less than 1 100 MPa	6.2.1.1 and 6.2.1.5
EN 1251-1:2000	Cryogenic vessels — Transportable, vacuum insulated, of not more than 1 000 litres volume — Part 1: Fundamental requirements	6.2.1.7.1
EN 1251-2:2000	Cryogenic vessels — Transportable, vacuum insulated, of not more than 1 000 litres volume — Part 2: Design, fabrication, inspection	6.2.1.1 and 6.2.1.5
EN 1251-3:2000	Cryogenic vessels — Transportable, vacuum insulated, of not more than 1 000 litres volume — Part 3: Operational requirements	6.2.1.6
EN 12862:2000	Portable gas cylinders — Design and construction of refillable portable welded aluminium alloy cylinders	6.2.1.1 and 6.2.1.5

Reference	Title of document	Applicable sections
FOR CLOSURES		
EN 849:1996 (except Annex A)	Transportable gas cylinders — Cylinder valves — Specification and type testing	6.2.1.1
FOR MARKINGS		
EN 1089-1: 1996	Transportable gas cylinders — Gas cylinder identification (excluding LPG) — Part 1: Stamp marking	6.2.1.7.1 except (b) and 6.2.1.7.2 except (b)

6.2.3. *Requirements for receptacles not designed, constructed and tested according to standards*

Receptacles not designed, constructed and tested according to standards listed in the table of 6.2.2 shall be designed, constructed and tested in accordance with the provisions of a technical code providing the same level of safety and recognised by the competent authority. The requirements of 6.2.1 and the following requirements however shall be met.

6.2.3.1. Metal cylinders, tubes, pressure drums and bundles of cylinders

At the test pressure, the stress in the metal at the most severely stressed point of the receptacle shall not exceed 77 % of the guaranteed minimum yield stress (Re).

'yield stress' means the stress at which a permanent elongation of 2 per thousand (i.e. 0,2 %) or, for austenitic steels, 1 % of the gauge length on the test-piece, has been produced.

NOTE: In the case of sheet-metal the axis of the tensile test-piece shall be at right angles to the direction of rolling. The permanent elongation at fracture, shall be measured on a test piece of circular cross-section in which the gauge length l is equal to five times the diameter d (l = 5d); if test pieces of rectangular cross-section are used, the gauge length l shall be calculated by the formula:

$$l = 5{,}65\sqrt{F_0}$$

where Fo indicates the initial cross-sectional area of the test-piece

Receptacles and their closures shall be made of suitable materials which shall be resistant to brittle fracture and to stress corrosion cracking between – 20 °C and + 50 °C.

For welded receptacles only materials of faultless weldability whose adequate impact strength at an ambient temperature of – 20 °C can be guaranteed, particularly in the weld seams and the zones adjacent thereto, shall be used.

Welds shall be skilfully made and shall afford the fullest safety.

Any additional thickness to allow for corrosion shall not be taken into consideration in calculating the thickness of the walls.

6.2.3.2. Additional provisions relating to aluminium-alloy receptacles for compressed gases, liquefied gases, gases dissolved under pressure and gas samples as well as articles containing gas under pressure

6.2.3.2.1. The materials of aluminium-alloy receptacles shall satisfy the following requirements:

	A	B	C	D
Tensile strength, Rm, in MPa (= N/mm^2)	49 to 186	196 to 372	196 to 372	343 to 490
Yield stress, Re, in MPa (= N/mm^2) (permanent set λ = 0,2 %)	10 to 167	59 to 314	137 to 334	206 to 412
Permanent elongation at fracture (l = 5d) in per cent	12 to 40	12 to 30	12 to 30	11 to 16

	A	B	C	D
Bend test (diameter of former d = nxe, where e is the thickness of the test piece)	n=5(Rm ≤ 98) n=6(Rm > 98)	n=6(Rm ≤ 325) n=7(Rm > 325)	n=6(Rm ≤ 325) n=7(Rm > 325)	n=7(Rm ≤ 392) n=8(Rm > 392)
Aluminium Association Series Number [a]	1 000	5 000	6 000	2 000

[a] See Aluminium Standards and Data, 5th edition, January 1976, published by the Aluminium Association, 750, 3rd Avenue, New York.

The actual properties will depend on the composition of the alloy concerned and on the final treatment of the receptacle, but whatever alloy is used the thickness of the receptacle shall be calculated by one of the following formulae:

$$e = \frac{P_{MPa}\,D}{\frac{2Re}{1,3} + P_{MPa}} \quad or \quad e = \frac{P_{bar}\,D}{\frac{20Re}{1,3} + P_{bar}}$$

where e = minimum thickness of receptacle wall, in mm;

P_{MPa} = test pressure, in MPa;

P_{bar} = test pressure, in bar;

D = nominal external diameter of the receptacle, in mm;

Re = guaranteed minimum proof stress with 0,2 % proof stress, in N/mm^2

In addition, the value of the minimum guaranteed proof stress (Re) introduced into the formula is in no case to be greater than 0,85 times the guaranteed minimum tensiles trength (Rm), whatever the type of alloy used.

NOTES:

1. The above characteristics are based on previous experience with the following materials used for receptacles.

   Column A: Aluminium, unalloyed, 99,5 % pure,

   Column B: Alloys of aluminium and magnesium,

   Column C: Alloys of aluminium, silicon and magnesium, such as ISO/R209-Al-Si-Mg (Aluminium Association 6351);

   Column D: Alloys of aluminium, copper and magnesium.

2. The permanent elongation at fracture is measured by means of test pieces of circular section in which the gauge length l is equal to five times the diameter d (l= 5d); if test-pieces of rectangular section are used the gauge length shall be calculated by the formula:

$$l = 5{,}65\sqrt{F_0}$$

   where Fo is the initial cross-sectional area of the test-piece.

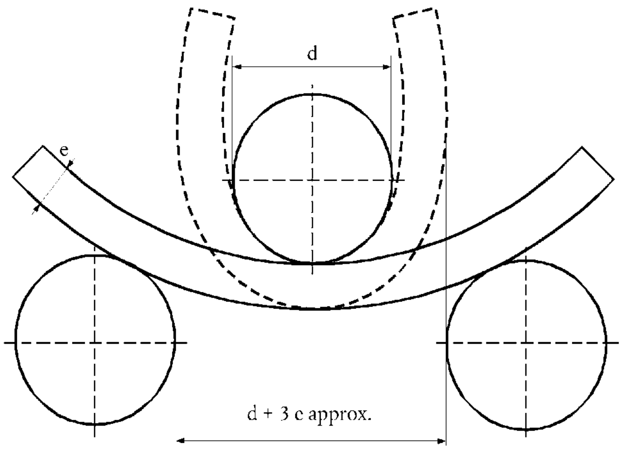
3. (a) The bend test (see diagram) shall be carried out on specimens obtained by cutting into two equal parts of width 3e, but in no case less than 25 mm, an annular section of a cylinder. The specimens shall not be machined elsewhere than on the edges.

   (b) The bend test shall be carried out between a mandrel of diameter (d) and two circular supports separated by a distance of (d + 3e). During the test the inner faces shall be separated by a distance not greater than the diameter of the mandrel.

   (c) The specimen shall not exhibit cracks when it has been bent inwards around the mandrel until the inner faces are separated by a distance not greater than the diameter of the mandrel.

   (d) The ratio (n) between the diameter of the mandrel and the thickness of the specimen shall conform to the values given in the table.

Diagram of bend test



6.2.3.2.2. A lower minimum elongation value is acceptable on condition that an additional test approved by the competent authority of the country in which the receptacles are made proves that safety of carriage is ensured to the same extent as in the case of receptacles constructed to comply with the characteristics given in the table in 6.2.3.2.1 (see also annex G of EN 1975: 1999).

6.2.3.2.3. The wall thickness of the receptacles at the thinnest point shall be the following

— where the diameter of the receptacle is less than 50 mm: not less than 1,5 mm;

— where the diameter of the receptacle is from 50 to 150 mm: not less than 2 mm; and

— where the diameter of the receptacle is more than 150 mm: not less than 3 mm.

6.2.3.2.4. The ends of the receptacles shall have a semicircular, elliptical or 'basket-handle' section; they shall afford the same degree of safety as the body of the receptacle.

6.2.3.3. Receptacles in composite materials

For composite cylinders, tubes, pressure drums and bundles of cylinders which make use of composite materials i.e. comprising a liner hoop wrapped or fully wrapped with reinforcement material, the construction shall be such that a minimum burst ratio (burst pressure divided by test pressure) is

— 1,67 for hoop wrapped receptacles

— 2,00 for fully wrapped receptacles

6.2.3.4. Closed cryogenic receptacles

The following requirements apply to the construction of closed cryogenic receptacles for refrigerated liquefied gases:

6.2.3.4.1. All the mechanical and technological characteristics of the metal used shall be established for each receptacle at the initial inspection; with regard to the impact strength, see 6.8.5.3.

6.2.3.4.2. If other materials are used, they shall resist brittle fracture at the lowest working temperature of the receptacle and its fittings.

6.2.3.4.3. Receptacles shall be fitted with a safety valve which shall be capable of opening at the working pressure shown on the receptacle. The valves shall be so constructed as to work perfectly even at their lowest working temperature. Their reliability of functioning at that temperature shall be established and checked by testing each valve or a sample of valves of the same type of construction.

6.2.3.4.4. The vents and safety valves of receptacles shall be so designed as to prevent the liquid from splashing out.

6.2.3.4.5. Receptacles whose filling is measured by volume shall be provided by a level indicator.

6.2.3.4.6. The receptacles shall be thermally insulated. The thermal insulation shall be protected against impact by means of continuous pressure envelope. If the space between the receptacle and the pressure envelope is airless (vacuum-insulation), the protective pressure envelope shall be designed to withstand without deformation an external pressure of at least 100 kPa (1 bar). If the pressure envelope is so closed as to be gas-tight (e.g. in the case of vacuum-insulation), a device shall be provided to prevent any dangerous pressure from developing in the insulating layer in the event of inadequate gas-tightness of the receptacle or its fittings. The device shall prevent moisture from penetrating into the insulation.

6.2.4. *General requirements for aerosols and small receptacles containing gas (gas cartridges)*

6.2.4.1. Design and construction

6.2.4.1.1. Aerosol dispensers (UN 1950 aerosols) containing only a gas or a mixture of gases, and UN 2037 small receptacles containing gas (gas cartridges), shall be made of metal. This requirement shall not apply to aerosols and small receptacles containing gas (gas cartridges) with a maximum capacity of 100 ml for UN 1011 butane. Other aerosol dispensers (UN 1950 aerosols) shall be made of metal, synthetic material or glass. Receptacles made of metal and having an outside diameter of not less than 40 mm shall have a concave bottom.

6.2.4.1.2. The capacity of receptacles made of metal shall not exceed 1 000 ml; that of receptacles made of synthetic material or of glass shall not exceed 500 ml.

6.2.4.1.3. Each model of receptacles shall, before being put into service, satisfy a hydraulic pressure test carried out in conformity with 6.2.4.2.

6.2.4.1.4. The release valves and dispersal devices of aerosol dispensers (UN 1950 aerosols) and the valves of UN 2037 small recipients containing gas (gas cartridges) shall ensure that the receptacles are so closed as to be leakproof and shall be protected against accidental opening. Valves and dispersal devices which close only by the action of the internal pressure are not to be accepted.

6.2.4.2. Initial testing

6.2.4.2.1. The internal pressure to be applied (test pressure) shall be 1,5 times the internal pressure at 50 °C, with a minimum pressure of 1 MPa (10 bar).

6.2.4.2.2. The hydraulic pressure tests shall be carried out on at least five empty receptacles of each model;

(a) until the prescribed test pressure is reached, by which time no leakage or visible permanent deformation shall have occurred;

(b) until leakage or bursting occurs; the dished end, if any, shall yield first and the receptacle shall not leak or burst until a pressure 1,2 times the test pressure has been reached or passed.

6.2.4.3. Reference to standards

The requirements of the section are deemed to be met if the following standards are complied with:

— for aerosol dispensers (UN 1950 aerosols): Annex to Council Directive 75/324/EEC [1] as amended by Commission Directive 94/1/EC [2];

— for UN 2037 small receptacles containing gas (gas cartridges) containing UN 1965 hydrocarbon gas mixture, liquefied, n.o.s: EN 417:1992 Non-refillable metallic gas cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliances — Construction, inspection, testing and marking.

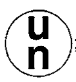
CHAPTER 6.3

Requirements for the construction and testing of packagings for substances of class 6.2

NOTE: The construction and testing requirements of Chapter 6.1 apply to infectious substances of UN numbers 2814 and 2900 assigned to risk group 2, and to UN 3291 clinical waste, unspecified, n.o.s. (see also 4.1.4.1, Packing Instructions P620 and P621).

6.3.1. *General*

6.3.1.1. A packaging that meets the requirements of this section and of 6.3.2 may, after decision by the competent authority, be marked with:

(a) the United Nations packaging symbol 

;

(b) the code designating the type of packaging according to 6.1.2;

[1] Council Directive of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers, published in the Official Journal of the European Communities OJ L 174, 9.6.1975.

[2] Commission Directive 94/1/EC of 6 January 1994, concerning technical adaptation of Council Directive 75/324/EEC on the approximation of the laws of the Member States relating to aerosol dispensers, published in the Official Journal of the European Communities OJ L 23, 28.1.1994.

(c) the text 'CLASS 6.2';

(d) the last two digits of the year of manufacture of the packaging;

(e) the state authorizing the allocation of the mark, indicated by the distinguishing sign for motor vehicles in international traffic ([1]);

(f) the name of the manufacturer or other identification of the packaging specified by the competent authority;

(g) for packagings meeting the requirements of 6.3.2.9, the letter 'U', inserted immediately following the marking required in (b) above.

6.3.1.2. Example of marking

4G/CLASS 6.2/92	as in 6.3.1.1 (a), (b), (c) and (d)
S/SP-9989-ERIKSSON	as in 6.3.1.1 (e), (f)

6.3.2. *Test requirements for packagings*

6.3.2.1. Other than for packagings for live animals and organisms, samples of each packaging shall be prepared for testing as described in 6.3.2.2 and then subjected to the tests in 6.3.2.4 to 6.3.2.6. If the nature of the packaging makes it necessary, equivalent preparation and tests are permitted, provided that these may be demonstrated to be at least as effective.

6.3.2.2. Samples of each packaging shall be prepared as for carriage, except that a liquid or solid infectious substance shall be replaced by water or, where conditioning at – 18 °C is specified, by water/antifreeze. Each primary receptacle shall be filled to 98 % capacity.

6.3.2.3. Tests required

Material of					Tests required				
outer packaging			inner packaging		Refer to 6.3.2.5				Refer to 6.3.2.6
Fibre board	Plastics	Other	Plastics	Other	(a)	(b)	(c)	(d)	
x			x			x	x	when dry ice is used	x
x				x		x			x
	x		x				x		x
	x			x			x		x
		x	x				x		x
		x		x	x				x

6.3.2.4. Packagings prepared as for carriage shall be subjected to the tests in 6.3.2.3, which — for test purposes — categorizes packagings according to their material characteristics. For outer packagings, the headings in the table relate to fibreboard or similar materials whose performance may be rapidly affected by moisture; plastics which may embrittle at low temperature; and other materials such as metal whose performance is not affected by moisture or temperature. If a primary receptacle and a secondary packaging, which together form an inner packaging, are made of different materials, the material of the primary receptacle determines the appropriate test. In instances where a primary receptacle is made of two materials, the material most liable to damage shall determine the appropriate tests.

6.3.2.5. (a) Samples shall be subjected to free-fall drops on to a rigid, non-resilient, flat, horizontal surface from a height of 9 m. Where the samples are in the shape of a box, five shall be dropped in sequence:

(i) one flat on to the base,

(ii) one flat on to the top,

([1]) Distinguishing sign for motor vehicles in international traffic prescribed in Vienna Convention on Road Traffic (1968).

(iii) one flat on to the long side,

(iv) one flat on to the short side,

(v) one on to a corner.

Where the samples are in the shape of a drum, three shall be dropped in sequence:

(vi) one diagonally on to the top chime, with the centre of gravity directly above the point of impact,

(vii) one diagonally on to the base chime,

(viii) one flat on to the side.

Following the appropriate drop sequence, there shall be no leakage from the primary receptacle(s) which shall remain protected by absorbent material in the secondary packaging.

NOTE: While the sample shall be released in the required orientation, it is accepted that for aerodynamic reasons the impact may not take place in that orientation.

(b) The samples shall be subjected to a water spray that simulates exposure to rainfall of approximately 5 cm per hour for at least one hour. They shall then be subjected to the test described in (a).

(c) The samples shall be conditioned in an atmosphere of – 18 °C or less for a period of at least 24 hours and within 15 minutes of removal from that atmosphere be subjected to the test described in (a). Where the samples contain dry ice, the conditioning period may be reduced to 4 hours.

(d) Where the packaging is intended to contain dry ice, a test additional to that specified in (a) or (b) or (c) shall be carried out. One sample shall be stored so that all the dry ice dissipates and then be subjected to the test described in (a).

6.3.2.6. Packagings with a gross mass of 7 kg or less shall be subjected to the tests described in (a) below and packagings with a gross mass exceeding 7 kg to the tests in (b) below.

(a) Samples shall be placed on a level hard surface. A cylindrical steel rod with a mass of at least 7 kg, a diameter not exceeding 38 mm and whose impact end edges have a radius not exceeding 6 mm, shall be dropped in a vertical free fall from a height of 1 m, measured from the impact end to the impact surface of the sample. One sample shall be placed on its base. A second sample shall be placed in an orientation perpendicular to that used for the first. In each instance the steel rod shall be aimed to impact the primary receptacle(s). Following each impact, penetration of the secondary packaging is acceptable, provided that there is no leakage from the primary receptacle(s).

(b) Samples shall be dropped on to the end of a cylindrical steel rod. The rod shall be set vertically in a level hard surface. It shall have a diameter of 38 mm and the edges of the upper end a radius not exceeding 6 mm. The rod shall protrude from the surface a distance at least equal to that between the primary receptacle(s) and the outer surface of the outer packaging with a minimum of 200 mm. One sample shall be dropped in a vertical free fall from a height of 1 m, measured from the top of the steel rod. A second sample shall be dropped from the same height in an orientation perpendicular to that used for the first. In each instance, the packaging shall be so orientated that the steel rod could penetrate the primary receptacle(s). Following each impact, there shall be no leakage from the primary receptacle(s).

6.3.2.7. The competent authority may permit the selective testing of packagings that differ only in minor respects from a tested type, e.g. smaller sizes of inner packagings or inner packagings of lower net mass; and packagings such as drums, bags and boxes which are produced with small reductions in external dimension(s).

6.3.2.8. Provided an equivalent level of performance is maintained, the following variations in the primary receptacles placed within a secondary packaging are allowed without the need for further testing of the completed packaging:

(a) Primary receptacles of equivalent or smaller size as compared to the tested primary receptacles may be used provided:

(i) the primary receptacles are of similar design to the primary receptacle tested (e.g. shape: round, rectangular, etc.);

(ii) the material of construction of the primary receptacle (e.g. glass, plastics, metal etc.) offers resistance to impact and stacking forces equivalent to or better than that of the primary receptacle originally tested;

(iii) the primary receptacles have the same or smaller openings and the closure is of equivalent design (e.g. screw cap, friction lid, etc.);

(iv) sufficient additional cushioning material is used to take up empty spaces and to prevent significant movement of the primary receptacles; and

(v) primary receptacles are oriented within the secondary packagings in the same manner as in the tested package.

(b) A lesser number of the tested primary receptacles, or of the alternative types of primary receptacles identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the primary receptacles.

6.3.2.9. Inner receptacles of any type may be assembled within an intermediate (secondary) packaging and carried without testing in the outer packaging under the following conditions:

(a) The intermediate/outer packaging combination shall have been successfully tested in accordance with 6.3.2.5(a) with fragile (e.g. glass) inner receptacles;

(b) The total combined gross mass of inner receptacles shall not exceed one half the gross mass of inner receptacles used for the drop test in (a) above;

(c) The thickness of cushioning between inner receptacles and between inner receptacles and the outside of the intermediate packaging shall not be reduced below the corresponding thicknesses in the originally tested packaging; and if a single inner receptacle was used in the original test, the thickness of cushioning between inner receptacles shall not be less than the thickness of cushioning between the outside of the intermediate packaging and the inner receptacle in the original test. When either fewer or smaller inner receptacles are used (as compared to the inner receptacles used in the drop test), sufficient additional cushioning material shall be used to take up the void;

(d) The outer packaging shall have successfully passed the stacking test in 6.1.5.6 while empty. The total mass of identical packages shall be based on the combined mass of inner receptacles used in the drop test in (a) above;

(e) For inner receptacles containing liquids, an adequate quantity of absorbent material to absorb the entire liquid content of the inner receptacles shall be present;

(f) If the outer packaging is intended to contain inner receptacles for liquids and is not leakproof, or is intended to contain inner receptacles for solids and is not siftproof, a means of containing any liquid or solid contents in the event of leakage shall be provided in the form of a leakproof liner, plastics bag or other equally effective means of containment.

CHAPTER 6.4

Requirements for the construction, testing and approval of packages for material of Class 7

6.4.1. (Reserved)

6.4.2. *General requirements*

6.4.2.1. The package shall be so designed in relation to its mass, volume and shape that it can be easily and safely carried. In addition, the package shall be so designed that it can be properly secured in or on the wagon during carriage.

6.4.2.2. The design shall be such that any lifting attachments on the package will not fail when used in the intended manner and that, if failure of the attachments should occur, the ability of the package to meet other requirements of this Directive would not be impaired. The design shall take account of appropriate safety factors to cover snatch lifting.

6.4.2.3. Attachments and any other features on the outer surface of the package which could be used to lift it shall be designed either to support its mass in accordance with the requirements of 6.4.2.2 or shall be removable or otherwise rendered incapable of being used during carriage.

6.4.2.4. As far as practicable, the packaging shall be so designed and finished that the external surfaces are free from protruding features and can be easily decontaminated.

6.4.2.5. As far as practicable, the outer layer of the package shall be so designed as to prevent the collection and the retention of water.

6.4.2.6. Any features added to the package at the time of carriage which are not part of the package shall not reduce its safety.

6.4.2.7. The package shall be capable of withstanding the effects of any acceleration, vibration or vibration resonance which may arise under routine conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole. In particular, nuts, bolts and other securing devices shall be so designed as to prevent them from becoming loose or being released unintentionally, even after repeated use.

6.4.2.8. The materials of the packaging and any components or structures shall be physically and chemically compatible with each other and with the radioactive contents. Account shall be taken of their behaviour under irradiation.

6.4.2.9. All valves through which the radioactive contents could otherwise escape shall be protected against unauthorized operation.

6.4.2.10. The design of the package shall take into account ambient temperatures and pressures that are likely to be encountered in routine conditions of transport.

6.4.2.11. For radioactive material having other dangerous properties the package design shall take into account those properties; see 2.1.3.5.3 and 4.1.9.1.5.

6.4.3. (Reserved)

6.4.4. *Requirements for excepted packages*

An excepted package shall be designed to meet the requirements specified in 6.4.2.

6.4.5. *Requirements for industrial packages*

6.4.5.1. Industrial packages Types 1, 2, and 3 (Types IP-1, IP-2 and IP-3) shall meet the requirements specified in 6.4.2 and 6.4.7.2.

6.4.5.2. An Industrial package Type 2 (Type IP-2) shall, if it were subjected to the tests specified in 6.4.15.4 and 6.4.15.5, prevent:

(a) Loss or dispersal of the radioactive contents; and

(b) Loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the package.

6.4.5.3. An Industrial package Type 3 (Type IP-3) shall meet all the requirements specified in 6.4.7.2 to 6.4.7.15.

6.4.5.4. Alternative requirements for Industrial packages Types 2 and 3 (Types IP-2 and IP-3)

6.4.5.4.1. Packages may be used as Industrial package Type 2 (Type IP-2) provided that:

(a) They satisfy the requirements of 6.4.5.1;

(b) They are designed to conform to the standards prescribed in Chapter 6.1 or other requirements at least equivalent to those standards; and

(c) When subjected to the tests required for packing groups I or II in Chapter 6.1, they would prevent:

(i) loss or dispersal of the radioactive contents; and

(ii) loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the package.

6.4.5.4.2. Tank-containers and portable tanks may also be used as Industrial package Types 2 or 3 (Types IP-2 or IP-3), provided that:

(a) They satisfy the requirements of 6.4.5.1;

(b) They are designed to conform to the standards prescribed in Chapter 6.7 or Chapter 6.8, or other requirements at least equivalent to those standards, and are capable of withstanding a test pressure of 265 kPa; and

(c) They are designed so that any additional shielding which is provided shall be capable of withstanding the static and dynamic stresses resulting from handling and routine conditions of transport and of preventing a loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the portable tanks or tank-containers.

6.4.5.4.3. Tanks, other than portable tanks and tank-containers, may also be used as Industrial package Types 2 or 3 (Types IP-2 or IP-3) for carrying LSA-I and LSA-II liquids and gases as prescribed in Table 4.1.9.2.4, provided that they conform to standards at least equivalent to those prescribed in 6.4.5.4.2.

6.4.5.4.4. Containers may also be used as Industrial package Types 2 or 3 (Types IP-2 or IP-3), provided that:

(a) The radioactive contents are restricted to solid materials;

(b) They satisfy the requirements of 6.4.5.1; and

(c) They are designed to conform to ISO 1496-1:1990: 'Series 1 Freight Containers — Specifications and Testing — Part 1: General Cargo Containers' excluding dimensions and ratings. They shall be designed such that if subjected to the tests prescribed in that document and the accelerations occurring during routine conditions of transport they would prevent:

(i) loss or dispersal of the radioactive contents; and

(ii) loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the containers.

6.4.5.4.5. Metal intermediate bulk containers may also be used as Industrial package Type 2 or 3 (Type IP-2 or IP-3) provided that:

(a) They satisfy the requirements of 6.4.5.1; and

(b) They are designed to conform to the standards and tests prescribed in Chapter 6.5 for packing groups I or II, but with the drop test conducted in the most damaging orientation, they would prevent:

(i) loss or dispersal of the radioactive contents; and

(ii) loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the intermediate bulk container.

6.4.6. *Requirements for packages containing uranium hexafluoride*

6.4.6.1. Except as allowed in 6.4.6.4, uranium hexafluoride shall be packaged and carried in accordance with the provisions of ISO 7195:1993 'Packaging of uranium hexafluoride (UF_6) for transport', and the requirements of 6.4.6.2 and 6.4.6.3. The package shall also meet the requirements prescribed elsewhere in this Directive which pertain to the radioactive and fissile properties of the material.

6.4.6.2. Each package designed to contain 0,1 kg or more of uranium hexafluoride shall be designed so that it would meet the following requirements:

(a) Withstand without leakage and without unacceptable stress, as specified in ISO 7195:1993, the structural test as specified in 6.4.21.5;

(b) Withstand without loss or dispersal of the uranium hexafluoride the test specified in 6.4.15.4; and

(c) Withstand without rupture of the containment system the test specified in 6.4.17.3.

6.4.6.3. Packages designed to contain 0,1 kg or more of uranium hexafluoride shall not be provided with pressure relief devices.

6.4.6.4. Subject to the approval of the competent authority, packages designed to contain 0,1 kg or more of uranium hexafluoride may be carried if:

(a) The packages are designed to requirements other than those given in ISO 7195:1993 and 6.4.6.2 and 6.4.6.3 but, notwithstanding, the requirements of 6.4.6.2 and 6.4.6.3 are met as far as practicable;

(b) The packages are designed to withstand without leakage and without unacceptable stress a test pressure less than 2,76 MPa as specified in 6.4.21.5; or

(c) For packages designed to contain 9 000 kg or more of uranium hexafluoride, the packages do not meet the requirement of 6.4.6.2(c).

6.4.7. *Requirements for Type A packages*

6.4.7.1. Type A packages shall be designed to meet the general requirements of 6.4.2 and of 6.4.7.2 to 6.4.7.17.

6.4.7.2. The smallest overall external dimension of the package shall not be less than 10 cm.

6.4.7.3. The outside of the package shall incorporate a feature such as a seal, which is not readily breakable and which, while intact, will be evidence that it has not been opened.

6.4.7.4. Any tie-down attachments on the package shall be so designed that, under normal and accident conditions of transport, the forces in those attachments shall not impair the ability of the package to meet the requirements of this Directive.

6.4.7.5. The design of the package shall take into account temperatures ranging from – 40 °C to + 70 °C for the components of the packaging. Attention shall be given to freezing temperatures for liquids and to the potential degradation of packaging materials within the given temperature range.

6.4.7.6. The design and manufacturing techniques shall be in accordance with national or international standards, or other requirements, acceptable to the competent authority.

6.4.7.7. The design shall include a containment system securely closed by a positive fastening device which cannot be opened unintentionally or by a pressure which may arise within the package.

6.4.7.8. Special form radioactive material may be considered as a component of the containment system.

6.4.7.9. If the containment system forms a separate unit of the package, it shall be capable of being securely closed by a positive fastening device which is independent of any other part of the packaging.

6.4.7.10. The design of any component of the containment system shall take into account, where applicable, the radiolytic decomposition of liquids and other vulnerable materials and the generation of gas by chemical reaction and radiolysis.

6.4.7.11. The containment system shall retain its radioactive contents under a reduction of ambient pressure to 60 kPa.

6.4.7.12. All valves, other than pressure relief valves, shall be provided with an enclosure to retain any leakage from the valve.

6.4.7.13. A radiation shield which encloses a component of the package specified as a part of the containment system shall be so designed as to prevent the unintentional release of that component from the shield. Where the radiation shield and such component within it form a separate unit, the radiation shield shall be capable of being securely closed by a positive fastening device which is independent of any other packaging structure.

6.4.7.14. A package shall be so designed that if it were subjected to the tests specified in 6.4.15, it would prevent:

(a) Loss or dispersal of the radioactive contents; and

(b) Loss of shielding integrity which would result in more than a 20 % increase in the radiation level at any external surface of the package.

6.4.7.15. The design of a package intended for liquid radioactive material shall make provision for ullage to accommodate variations in the temperature of the contents, dynamic effects and filling dynamics.

Type A packages to contain liquids

6.4.7.16. A Type A package designed to contain liquids shall, in addition:

(a) Be adequate to meet the conditions specified in 6.4.7.14 above if the package is subjected to the tests specified in 6.4.16; and

(b) Either

(i) be provided with sufficient absorbent material to absorb twice the volume of the liquid contents. Such absorbent material shall be suitably positioned so as to contact the liquid in the event of leakage; or

(ii) be provided with a containment system composed of primary inner and secondary outer containment components designed to ensure retention of the liquid contents, within the secondary outer containment components, even if the primary inner components leak.

Type A packages to contain gas

6.4.7.17. A package designed for gases shall prevent loss or dispersal of the radioactive contents if the package were subjected to the tests specified in 6.4.16. A Type A package designed for tritium gas or for noble gases shall be excepted from this requirement.

6.4.8. *Requirements for Type B(U) packages*

6.4.8.1. Type B(U) packages shall be designed to meet the requirements specified in 6.4.2, and of 6.4.7.2 to 6.4.7.15, except as specified in 6.4.7.14(a), and, in addition, the requirements specified in 6.4.8.2 to 6.4.8.15.

6.4.8.2. A package shall be so designed that, under the ambient conditions specified in 6.4.8.4 and 6.4.8.5 heat generated within the package by the radioactive contents shall not, under normal conditions of transport, as demonstrated by the tests in 6.4.15, adversely affect the package in such a way that it would fail to meet the applicable requirements for containment and shielding if left unattended for a period of one week. Particular attention shall be paid to the effects of heat, which may:

(a) Alter the arrangement, the geometrical form or the physical state of the radioactive contents or, if the radioactive material is enclosed in a can or receptacle (for example, clad fuel elements), cause the can, receptacle or radioactive material to deform or melt; or

(b) Lessen the efficiency of the packaging through differential thermal expansion or cracking or melting of the radiation shielding material; or

(c) In combination with moisture, accelerate corrosion.

6.4.8.3. A package shall be so designed that, under the ambient condition specified in 6.4.8.4, the temperature of the accessible surfaces of a package shall not exceed 50 °C, unless the package is carried under exclusive use.

6.4.8.4. The ambient temperature shall be assumed to be 38 °C.

6.4.8.5. The solar insolation conditions shall be assumed to be as specified in Table 6.4.8.5.

Table 6.4.8.5

Insolation data

Form and location of surface	Insolation for 12 hours per day (W/m^2)
Flat surfaces carried horizontally:	
— base	none
— other surfaces	800
Flat surfaces not carried horizontally:	
— each surface	200 [a]
Curved surfaces	400 [a]

[a] Alternatively, a sine function may be used, with an absorption coefficient adopted and the effects of possible reflection from neighbouring objects neglected.

6.4.8.6. A package which includes thermal protection for the purpose of satisfying the requirements of the thermal test specified in 6.4.7.13 shall be so designed that such protection will remain effective if the package is subjected to the tests specified in 6.4.15 and 6.4.17.2 (a) and (b) or 6.4.17.2 (b) and (c), as appropriate. Any such protection on the exterior of the package shall not be rendered ineffective by ripping, cutting, skidding, abrasion or rough handling.

6.4.8.7. A package shall be so designed that, if it were subjected to:

(a) The tests specified in 6.4.15, it would restrict the loss of radioactive contents to not more than 10^{-6} A_2 per hour; and

(b) The tests specified in 6.4.17.1, 6.4.17.2(b), 6.4.17.3 and 6.4.17.4 and the tests in

(i) 6.4.17.2(c), when the package has a mass not greater than 500 kg, an overall density not greater than 1 000 kg/m^3 based on the external dimensions, and radioactive contents greater than 1 000 A_2 not as special form radioactive material, or

(ii) 6.4.17.2(a), for all other packages, it would meet the following requirements:

— retain sufficient shielding to ensure that the radiation level at 1 m from the surface of the package would not exceed 10 mSv/h with the maximum radioactive contents which the package is designed to contain; and

— restrict the accumulated loss of radioactive contents in a period of one week to not more than 10 A_2 for krypton-85 and not more than A_2 for all other radionuclides.

Where mixtures of different radionuclides are present, the provisions of 2.2.7.7.2.4 to 2.2.7.7.2.6 shall apply except that for krypton-85 an effective A_2(i) value equal to 10 A_2 may be used. For case (a) above, the assessment shall take into account the external contamination limits of 4.1.9.1.2.

6.4.8.8. A package for radioactive contents with activity greater than 10^5 A_2 shall be so designed that if it were subjected to the enhanced water immersion test specified in 6.4.18, there would be no rupture of the containment system.

6.4.8.9. Compliance with the permitted activity release limits shall depend neither upon filters nor upon a mechanical cooling system.

6.4.8.10. A package shall not include a pressure relief system from the containment system which would allow the release of radioactive material to the environment under the conditions of the tests specified in 6.4.15 and 6.4.17.

6.4.8.11. A package shall be so designed that if it were at the maximum normal operating pressure and it were subjected to the tests specified in 6.4.15 and 6.4.17, the level of strains in the containment system would not attain values which would adversely affect the package in such a way that it would fail to meet the applicable requirements.

6.4.8.12. A package shall not have a maximum normal operating pressure in excess of a gauge pressure of 700 kPa.

6.4.8.13. The maximum temperature of any surface readily accessible during carriage of a package shall not exceed 85 °C in the absence of insolation under the ambient conditions specified in 6.4.8.4. The package shall be carried under exclusive use, as specified in 6.4.8.3, if this maximum temperature exceeds 50 °C. Account may be taken of barriers or screens intended to give protection to persons without the need for the barriers or screens being subject to any test.

6.4.8.14. (Reserved)

6.4.8.15. A package shall be designed for an ambient temperature range from – 40 °C to + 38 °C.

6.4.9. *Requirements for Type B(M) packages*

6.4.9.1. Type B(M) packages shall meet the requirements for Type B(U) packages specified in 6.4.8.1, except that for packages to be carried solely within a specified country or solely between specified countries, conditions other than those given in 6.4.7.5, 6.4.8.4, 6.4.8.5, and 6.4.8.8 to 6.4.8.15 above may be assumed with the approval of the competent authorities of these countries. Notwithstanding, the requirements for Type B(U) packages specified in 6.4.8.8 to 6.4.8.15 shall be met as far as practicable.

6.4.9.2. Intermittent venting of Type B(M) packages may be permitted during transport, provided that the operational controls for venting are acceptable to the relevant competent authorities.

6.4.10. (Reserved)

6.4.11. *Requirements for packages containing fissile material*

6.4.11.1. Fissile material shall be carried so as to;

(a) Maintain subcriticality during normal and accident conditions of transport; in particular, the following contingencies shall be considered:

(i) water leaking into or out of packages;

(ii) the loss of efficiency of built-in neutron absorbers or moderators;

(iii) rearrangement of the contents either within the package or as a result of loss from the package;

(iv) reduction of spaces within or between packages;

(v) packages becoming immersed in water or buried in snow; and

(vi) temperature changes; and

(b) Meet the requirements:

(i) of 6.4.7.2 for fissile material contained in packages;

(ii) prescribed elsewhere in this Directive which pertain to the radioactive properties of the material; and

(iii) specified in 6.4.11.3 to 6.4.11.12, unless excepted by 6.4.11.2.

6.4.11.2. Fissile material meeting one of the provisions (a) to (d) of this paragraph is excepted from the requirement to be carried in packages that comply with 6.4.11.3 to 6.4.11.12 as well as the other requirements of this Directive that apply to fissile material. Only one type of exception is allowed per consignment.

(a) A mass limit per consignment such that:

$$\frac{\text{mass of uranium - 235 (g)}}{X} + \frac{\text{mass of other fissile material (g)}}{Y} < 1$$

where X and Y are the mass limits defined in Table 6.4.11.2, provided that either:

(i) each individual package contains not more than 15 g of fissile material; for unpackaged material, this quantity limitation shall apply to the consignment being carried in or on the wagon, or

(ii) the fissile material is a homogeneous hydrogenous solution or mixture where the ratio of fissile nuclides to hydrogen is less than 5 % by mass, or

(iii) there is not more than 5 g of fissile material in any 10 litre volume of material.

Neither beryllium nor deuterium shall be present in quantities exceeding 0,1 % of the fissile material mass;

(b) Uranium enriched in uranium-235 to a maximum of 1 % by mass, and with a total plutonium and uranium-233 content not exceeding 1 % of the mass of uranium-235, provided that the fissile material is distributed essentially homogeneously throughout the material. In addition, if uranium-235 is present in metallic, oxide or carbide forms, it shall not form a lattice arrangement;

(c) Liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of 2 % by mass, with a total plutonium and uranium-233 content not exceeding 0,002 % of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2;

(d) Packages containing, individually, a total plutonium mass not more than 1 kg, of which not more than 20 % by mass may consist of plutonium-239, plutonium-241 or any combination of those radionuclides.

Table 6.4.11.2

Consignment mass limits for exceptions from the requirements for packages containing fissile material

Fissile material	Fissile material mass (g) mixed with substances having an average hydrogen density less than or equal to water	Fissile material mass (g) mixed with substances having an average hydrogen density greater than water
Uranium-235 (X)	400	290
Other fissile material (Y)	250	180

6.4.11.3. Where the chemical or physical form, isotopic composition, mass or concentration, moderation ratio or density, or geometric configuration is not known, the assessments of 6.4.11.7 to 6.4.11.12 shall be performed assuming that each parameter that is not known has the value which gives the maximum neutron multiplication consistent with the known conditions and parameters in these assessments.

6.4.11.4. For irradiated nuclear fuel the assessments of 6.4.11.7 to 6.4.11.12 shall be based on an isotopic composition demonstrated to provide:

(a) The maximum neutron multiplication during the irradiation history; or

(b) A conservative estimate of the neutron multiplication for the package assessments. After irradiation but prior to shipment, a measurement shall be performed to confirm the conservatism of the isotopic composition.

6.4.11.5. The packaging, after being subjected to the tests specified in 6.4.15, shall prevent the entry of a 10 cm cube.

6.4.11.6. The package shall be designed for an ambient temperature range of − 40 °C to + 38 °C unless the competent authority specifies otherwise in the certificate of approval for the package design.

6.4.11.7. For a package in isolation, it shall be assumed that water can leak into or out of all void spaces of the package, including those within the containment system. However, if the design incorporates special features to prevent such leakage of water into or out of certain void spaces, even as a result of error, absence of leakage may be assumed in respect of those void spaces. Special features shall include the following:

(a) Multiple high standard water barriers, each of which would remain watertight if the package were subject to the tests prescribed in 6.4.11.12(b), a high degree of quality control in the manufacture, maintenance and repair of packagings and tests to demonstrate the closure of each package before each shipment; or

(b) For packages containing uranium hexafluoride only:

(i) packages where, following the tests prescribed in 6.4.11.12(b), there is no physical contact between the valve and any other component of the packaging other than at its original point of attachment and where, in addition, following the test prescribed in 6.4.17.3 the valves remain leaktight; and

(ii) a high degree of quality control in the manufacture, maintenance and repair of packagings coupled with tests to demonstrate closure of each package before each shipment.

6.4.11.8. It shall be assumed that the confinement system shall be closely reflected by at least 20 cm of water or such greater reflection as may additionally be provided by the surrounding material of the packaging. However, when it can be demonstrated that the confinement system remains within the packaging following the tests prescribed in 6.4.11.12(b), close reflection of the package by at least 20 cm of water may be assumed in 6.4.11.9(c).

6.4.11.9. The package shall be subcritical under the conditions of 6.4.11.7 and 6.4.11.8 with the package conditions that result in the maximum neutron multiplication consistent with:

(a) Routine conditions of transport (incident free);

(b) The tests specified in 6.4.11.11(b);

(c) The tests specified in 6.4.11.12(b).

6.4.11.10. (Reserved)

6.4.11.11. For normal conditions of transport a number 'N' shall be derived, such that five times 'N' shall be subcritical for the arrangement and package conditions that provide the maximum neutron multiplication consistent with the following:

(a) There shall not be anything between the packages, and the package arrangement shall be reflected on all sides by at least 20 cm of water; and

(b) The state of the packages shall be their assessed or demonstrated condition if they had been subjected to the tests specified in 6.4.15.

6.4.11.12. For accident conditions of transport a number 'N' shall be derived, such that two times 'N' shall be subcritical for the arrangement and package conditions that provide the maximum neutron multiplication consistent with the following:

(a) Hydrogenous moderation between packages, and the package arrangement reflected on all sides by at least 20 cm of water; and

(b) The tests specified in 6.4.15 followed by whichever of the following is the more limiting:

(i) the tests specified in 6.4.17.2(b) and, either 6.4.17.2(c) for packages having a mass not greater than 500 kg and an overall density not greater than 1 000 kg/m^3 based on the external dimensions, or 6.4.17.2(a) for all other packages; followed by the test specified in 6.4.17.3 and completed by the tests specified in 6.4.19.1 to 6.4.19.3; or

(ii) the test specified in 6.4.17.4; and

(c) Where any part of the fissile material escapes from the containment system following the tests specified in 6.4.11.12(b), it shall be assumed that fissile material escapes from each package in the array and all of the fissile material shall be arranged in the configuration and moderation that results in the maximum neutron multiplication with close reflection by at least 20 cm of water.

6.4.12. *Test procedures and demonstration of compliance*

6.4.12.1. Demonstration of compliance with the performance standards required in 2.2.7.3.3, 2.2.7.3.4, 2.2.7.4.1, 2.2.7.4.2, and 6.4.2 to 6.4.11 shall be accomplished by any of the methods listed below or by a combination thereof.

(a) Performance of tests with specimens representing LSA-III material, or special form radioactive material, or with prototypes or samples of the packaging, where the contents of the specimen or the packaging for the tests shall simulate as closely as practicable the expected range of radioactive contents and the specimen or packaging to be tested shall be prepared as presented for carriage;

(b) Reference to previous satisfactory demonstrations of a sufficiently similar nature;

(c) Performance of tests with models of appropriate scale incorporating those features which are significant with respect to the item under investigation when engineering experience has shown results of such tests to be suitable for design purposes. When a scale model is used, the need for adjusting certain test parameters, such as penetrator diameter or compressive load, shall be taken into account;

(d) Calculation, or reasoned argument, when the calculation procedures and parameters are generally agreed to be reliable and conservative.

6.4.12.2. After the specimen, prototype or sample has been subjected to the tests, appropriate methods of assessment shall be used to ensure that the requirements for the test procedures have been fulfilled in compliance with the performance and acceptance standards prescribed in 2.2.7.3.3, 2.2.7.3.4, 2.2.7.4.1, 2.2.7.4.2, and 6.4.2 to 6.4.11.

6.4.12.3. All specimens shall be inspected before testing in order to identify and record faults or damage including the following:

(a) Divergence from the design;

(b) Defects in manufacture;

(c) Corrosion or other deterioration; and

(d) Distortion of features.

The containment system of the package shall be clearly specified. The external features of the specimen shall be clearly identified so that reference may be made simply and clearly to any part of such specimen.

6.4.13. *Testing the integrity of the containment system and shielding and evaluating criticality safety*

After each of the applicable tests specified in 6.4.15 to 6.4.21:

(a) Faults and damage shall be identified and recorded;

(b) It shall be determined whether the integrity of the containment system and shielding has been retained to the extent required in 6.4.2 to 6.4.11 for the package under test; and

(c) For packages containing fissile material, it shall be determined whether the assumptions and conditions used in the assessments required by 6.4.11.1 to 6.4.11.12 for one or more packages are valid.

6.4.14. *Target for drop tests*

The target for the drop tests specified in 2.2.7.4.5(a), 6.4.15.4, 6.4.16(a), 6.4.17.2 shall be a flat, horizontal surface of such a character that any increase in its resistance to displacement or deformation upon impact by the specimen would not significantly increase the damage to the specimen.

6.4.15. *Tests for demonstrating ability to withstand normal conditions of transport*

6.4.15.1. The tests are: the water spray test, the free drop test, the stacking test and the penetration test. Specimens of the package shall be subjected to the free drop test, the stacking test and the penetration test, preceded in each case by the water spray test. One specimen may be used for all the tests, provided that the requirements of 6.4.15.2 are fulfilled.

6.4.15.2. The time interval between the conclusion of the water spray test and the succeeding test shall be such that the water has soaked in to the maximum extent, without appreciable drying of the exterior of the specimen. In the absence of any evidence to the contrary, this interval shall be taken to be two hours if the water spray is applied from four directions simultaneously. No time interval shall elapse, however, if the water spray is applied from each of the four directions consecutively.

6.4.15.3. Water spray test: The specimen shall be subjected to a water spray test that simulates exposure to rainfall of approximately 5 cm per hour for at least one hour.

6.4.15.4. Free drop test: The specimen shall drop onto the target so as to suffer maximum damage in respect of the safety features to be tested.

(a) The height of drop measured from the lowest point of the specimen to the upper surface of the target shall be not less than the distance specified in Table 6.4.15.4 for the applicable mass. The target shall be as defined in 6.4.14;

(b) For rectangular fibreboard or wood packages not exceeding a mass of 50 kg, a separate specimen shall be subjected to a free drop onto each corner from a height of 0,3 m;

(c) For cylindrical fibreboard packages not exceeding a mass of 100 kg, a separate specimen shall be subjected to a free drop onto each of the quarters of each rim from a height of 0,3 m.

Table 6.4.15.4

Free drop distance for testing packages to normal conditions of transport

Package mass (kg)	Free drop distance (m)
Package mass < 5 000	1,2
5 000 ≤ Package mass < 10 000	0,9
10 000 ≤ Package mass < 15 000	0,6
15 000 ≤ Package mass	0,3

6.4.15.5. Stacking test: Unless the shape of the packaging effectively prevents stacking, the specimen shall be subjected, for a period of 24 h, to a compressive load equal to the greater of the following:

(a) The equivalent of 5 times the mass of the actual package; and

(b) The equivalent of 13 kPa multiplied by the vertically projected area of the package.

The load shall be applied uniformly to two opposite sides of the specimen, one of which shall be the base on which the package would typically rest.

6.4.15.6. Penetration test: The specimen shall be placed on a rigid, flat, horizontal surface which will not move significantly while the test is being carried out.

(a) A bar of 3,2 cm in diameter with a hemispherical end and a mass of 6 kg shall be dropped and directed to fall, with its longitudinal axis vertical, onto the centre of the weakest part of the specimen, so that, if it penetrates sufficiently far, it will hit the containment system. The bar shall not be significantly deformed by the test performance;

(b) The height of drop of the bar measured from its lower end to the intended point of impact on the upper surface of the specimen shall be 1 m.

6.4.16. *Additional tests for Ttype A packages designed for liquids and gases*

A specimen or separate specimens shall be subjected to each of the following tests unless it can be demonstrated that one test is more severe for the specimen in question than the other, in which case one specimen shall be subjected to the more severe test.

(a) Free drop test: The specimen shall drop onto the target so as to suffer the maximum damage in respect of containment. The height of the drop measured from the lowest part of the specimen to the upper surface of the target shall be 9 m. The target shall be as defined in 6.4.14;

(b) Penetration test: The specimen shall be subjected to the test specified in 6.4.15.6 except that the height of drop shall be increased to 1,7 m from the 1 m specified in 6.4.15.6(b).

6.4.17. *Tests for demonstrating ability to withstand accident conditions in transport*

6.4.17.1. The specimen shall be subjected to the cumulative effects of the tests specified in 6.4.17.2 and 6.4.17.3, in that order. Following these tests, either this specimen or a separate specimen shall be subjected to the effect(s) of the water immersion test(s) as specified in 6.4.17.4 and, if applicable, 6.4.18.

6.4.17.2. Mechanical test: The mechanical test consists of three different drop tests. Each specimen shall be subjected to the applicable drops as specified in 6.4.8.7 or 6.4.11.12. The order in which the specimen is subjected to the drops shall be such that, on completion of the mechanical test, the specimen shall have suffered such damage as will lead to the maximum damage in the thermal test which follows.

(a) For drop I, the specimen shall drop onto the target so as to suffer the maximum damage, and the height of the drop measured from the lowest point of the specimen to the upper surface of the target shall be 9 m. The target shall be as defined in 6.4.14;

(b) For drop II, the specimen shall drop so as to suffer the maximum damage onto a bar rigidly mounted perpendicularly on the target. The height of the drop measured from the intended point of impact of the specimen to the upper surface of the bar shall be 1 m. The bar shall be of solid mild steel of circular section, (15,0 ± 0,5) cm in diameter and 20 cm long unless a longer bar would cause greater damage, in which case a bar of sufficient length to cause maximum damage shall be used. The upper end of the bar shall be flat and horizontal with its edges rounded off to a radius of not more than 6 mm. The target on which the bar is mounted shall be as described in 6.4.14;

(c) For drop III, the specimen shall be subjected to a dynamic crush test by positioning the specimen on the target so as to suffer maximum damage by the drop of a 500 kg mass from 9 m onto the specimen. The mass shall consist of a solid mild steel plate 1 m by 1 m and shall fall in a horizontal attitude. The height of the drop shall be measured from the underside of the plate to the highest point of the specimen. The target on which the specimen rests shall be as defined in 6.4.14.

6.4.17.3. Thermal test: The specimen shall be in thermal equilibrium under conditions of an ambient temperature of 38 °C, subject to the solar insolation conditions specified in Table 6.4.8.5 and subject to the design maximum rate of internal heat generation within the package from the radioactive contents. Alternatively, any of these parameters are allowed to have different values prior to and during the test, providing due account is taken of them in the subsequent assessment of package response.

The thermal test shall then consist of:

(a) Exposure of a specimen for a period of 30 minutes to a thermal environment which provides a heat flux at least equivalent to that of a hydrocarbon fuel/air fire in sufficiently quiescent ambient conditions to give a minimum average flame emissivity coefficient of 0,9 and an average temperature of at least 800 °C, fully engulfing the specimen, with a surface absorptivity coefficient of 0,8 or that value which the package may be demonstrated to possess if exposed to the fire specified, followed by;

(b) Exposure of the specimen to an ambient temperature of 38 °C, subject to the solar insolation conditions specified in Table 6.4.8.5 and subject to the design maximum rate of internal heat generation within the package by the radioactive contents for a sufficient period to ensure that temperatures in the specimen are everywhere decreasing and/or are approaching initial steady state conditions. Alternatively, any of these parameters are allowed to have different values following cessation of heating, providing due account is taken of them in the subsequent assessment of package response.

During and following the test the specimen shall not be artificially cooled and any combustion of materials of the specimen shall be permitted to proceed naturally.

6.4.17.4. Water immersion test: The specimen shall be immersed under a head of water of at least 15 m for a period of not less than eight hours in the attitude which will lead to maximum damage. For demonstration purposes, an external gauge pressure of at least 150 kPa shall be considered to meet these conditions.

6.4.18. *Enhanced water immersion test for type B(U) and type B(M) packages containing more than 10^5 A_2*

Enhanced water immersion test: The specimen shall be immersed under a head of water of at least 200 m for a period of not less than one hour. For demonstration purposes, an external gauge pressure of at least 2 MPa shall be considered to meet these conditions.

6.4.19. *Water leakage test for package containing fissile material*

6.4.19.1. Packages for which water in-leakage or out-leakage to the extent which results in greatest reactivity has been assumed for purposes of assessment under 6.4.11.7 to 6.4.11.12 shall be excepted from the test.

6.4.19.2. Before the specimen is subjected to the water leakage test specified below, it shall be subjected to the tests in 6.4.17.2 (b), and either 6.4.17.2 (a) or (c) as required by 6.4.11.12, and the test specified in 6.4.17.3.

6.4.19.3. The specimen shall be immersed under a head of water of at least 0,9 m for a period of not less than eight hours and in the attitude for which maximum leakage is expected.

6.4.20. (Reserved)

6.4.21. *Tests for packagings designed to contain at least 0,1 kg of uranium hexafluoride*

6.4.21.1. Every manufactured packaging and its service and structural equipment shall, either jointly or separately, undergo an inspection initially before being put into service and periodically thereafter. These inspections shall be performed and certified by agreement with the competent authority.

6.4.21.2. The initial inspection shall consist of a check of the design characteristics, the strength test, the leakproofness test, the water capacity test and a check of satisfactory operation of the service equipment.

6.4.21.3. The periodic inspections shall consist of a visual inspection, the strength test, the leakproofness test and a check of satisfactory operations of the service equipment. The interval for periodic inspections shall be not more than five years. Packagings which have not been inspected within this five-year period shall be examined before carriage in accordance with a programme approved by the competent authority. They shall not be refilled before completion of the full programme for periodic inspections.

6.4.21.4. The check of the design characteristics shall demonstrate compliance with the design type specifications and the manufacturing programme.

6.4.21.5. The initial strength test for packagings designed to contain at least 0,1 kg of uranium hexafluoride shall be conducted by means of a hydraulic test with an internal pressure of 1,38 MPa (13,8 bar). But if the test pressure is less than 2,76 MPa (27,6 bar), the design shall require multilateral approval. For the periodic inspections, any other equivalent nondestructive examination procedure recognized by the competent authority may be applied.

6.4.21.6. The leakproofness test shall be performed in accordance with a procedure which is capable of indicating leakages in the containment system with a sensitivity of 0,1 Pa.l/s (10^{-6} bar.l/s).

6.4.21.7. The water capacity of the packagings shall be established with an accuracy of ± 0,25 % at a reference temperature of 15 °C. The volume shall be stated on the plate described in 6.4.21.8.

6.4.21.8. A plate made of non-corroding metal shall be durably attached to every packaging in a readily accessible place. The method of attaching the plate shall not impair the strength of the packaging. The following particulars, at least, shall be marked on the plate by stamping or by any other equivalent method:

— approval number;

— manufacturer's serial number;

— test pressure (gauge pressure);

— contents: uranium hexafluoride;

— capacity in litres;

— maximum permissible filling mass of uranium hexafluoride;

— tare mass;

— date (month, year) of the initial test and the most recent periodic test;

— stamp of the expert who performed the test.

6.4.22. *Approvals of package designs and materials*

6.4.22.1. The approval of designs for packages containing 0,1 kg or more of uranium hexafluoride requires that:

(a) Each design that meets the requirements of 6.4.6.4 shall require multilateral approval;

(b) After 31 December 2003, each design that meets the requirements of 6.4.6.1 to 6.4.6.3 shall require unilateral approval by the competent authority of the country of origin of the design;

6.4.22.2. Each Type B(U) and Type C package design shall require unilateral approval, except that:

(a) A package design for fissile material, which is also subject to 6.4.22.4, 6.4.23.7, and 5.1.5.3.1 shall require multilateral approval; and

(b) A Type B(U) package design for low dispersible radioactive material shall require multilateral approval.

6.4.22.3. Each Type B(M) package design, including those for fissile material which are also subject to 6.4.22.4, 6.4.23.7, and 5.1.5.3.1 and those for low dispersible radioactive material, shall require multilateral approval.

6.4.22.4. Each package design for fissile material which is not excepted according to 6.4.11.2 from the requirements that apply specifically to packages containing fissile material shall require multilateral approval.

6.4.22.5. The design for special form radioactive material shall require unilateral approval. The requirements of 6.4.22.2 (c) are also applicable. The design for low dispersible radioactive material shall require multilateral approval (see also 6.4.23.8).

6.4.22.6. Any design that requires unilateral approval originating in a Member State shall be approved by the competent authority of that country; if the country where the package has been designed is not a Member State carriage is possible on condition that:

(i) a certificate has been supplied by that country, proving that the package satisfies the technical provisions of this Directive, and that this certificate is countersigned by the competent authority of the first Member State reached by the consignment;

(ii) if no certificate and no existing package design approval from a Member State has been supplied, the package design is approved by the competent authority of the first Member State reached by the consignment

6.4.22.7. For designs approved under the transitional measures see 1.6.6.

6.4.23. *Applications and approvals for radioactive material transport*

6.4.23.1. (Reserved)

6.4.23.2. An application for shipment approval shall include:

(a) The period of time, related to the shipment, for which the approval is sought;

(b) The actual radioactive contents, the expected modes of transport, the type of wagon, and the probable or proposed route; and

(c) The details of how the precautions and administrative or operational controls, referred to in the package design approval certificates issued under 5.1.5.3.1, are to be put into effect.

6.4.23.3. An application for approval of shipments under special arrangement shall include all the information necessary to satisfy the competent authority that the overall level of safety in transport is at least equivalent to that which would be provided if all the applicable requirements of this Directive had been met.

The application shall also include:

(a) A statement of the respects in which, and of the reasons why, the consignment cannot be made in full accordance with the applicable requirements of this Directive; and

(b) A statement of any special precautions or special administrative or operational controls which are to be employed during transport to compensate for the failure to meet the applicable requirements of this Directive.

6.4.23.4. An application for a Type B(U) or Type C package approval shall include:

(a) A detailed description of the proposed radioactive contents with reference to their physical and chemical states and the nature of the radiation emitted;

(b) A detailed statement of the design, including complete engineering drawings and schedules of materials and methods of manufacture;

(c) A statement of the tests which have been done and their results, or evidence based on calculative methods or other evidence that the design is adequate to meet the applicable requirements;

(d) The proposed operating and maintenance instructions for the use of the packaging;

(e) If the package is designed to have a maximum normal operating pressure in excess of 100 kPa gauge, a specification of the materials of manufacture of the containment system, the samples to be taken, and the tests to be made;

(f) Where the proposed radioactive contents are irradiated fuel, the applicant shall state and justify any assumption in the safety analysis relating to the characteristics of the fuel and for irradiated fissile nuclear fuel describe any pre-shipment measurement as required by 6.4.11.4(b);

(g) Any special stowage provisions necessary to ensure the safe dissipation of heat from the package considering the various modes of transport to be used and type of wagon or container;

(h) A reproducible illustration, not larger than 21 cm by 30 cm, showing the make-up of the package;

(i) A specification of the applicable quality assurance programme as required by 1.7.3.

6.4.23.5. An application for approval of a Type B(M) package design shall include, in addition to the general information required for package approval in 6.4.23.4 for Type B(U) packages:

(a) A list of the requirements specified in 6.4.7.5, 6.4.8.4, 6.4.8.5 and 6.4.8.8 to 6.4.8.15 with which the package does not conform;

(b) Any proposed supplementary operational controls to be applied during transport not provided for in this Directive, but which are necessary to ensure the safety of the package or to compensate for the deficiencies listed in (a) above;

(c) A statement relative to any restrictions on the mode of transport and to any special loading, carriage, unloading or handling procedures; and

(d) The range of ambient conditions (temperature, solar radiation) which are expected to be encountered during transport and which have been taken into account in the design.

6.4.23.6. The application for approval of designs for packages containing 0,1 kg or more of uranium hexafluoride shall include all information necessary to satisfy the competent authority that the design meets the applicable requirements of 6.4.6.1, and a specification of the applicable quality assurance programme as required in 1.7.3.

6.4.23.7. An application for a fissile package approval shall include all information necessary to satisfy the competent authority that the design meets the applicable requirements of 6.4.11.1, and a specification of the applicable quality assurance programme as required by 1.7.3.

6.4.23.8. An application for approval of design for special form radioactive material and design for low dispersible radioactive material shall include:

(a) A detailed description of the radioactive material or, if a capsule, the contents; particular reference shall be made to both physical and chemical states;

(b) A detailed statement of the design of any capsule to be used;

(c) A statement of the tests which have been done and their results, or evidence based on calculative methods to show that the radioactive material is capable of meeting the performance standards, or other evidence that the special form radioactive material or low dispersible radioactive material meets the applicable requirements of this Directive;

(d) A specification of the applicable quality assurance programme as required in 1.7.3; and

(e) Any proposed pre-shipment actions for use in the consignment of special form radioactive material or low dispersible radioactive material.

6.4.23.9. Each approval certificate issued by a competent authority shall be assigned an identification mark. The mark shall be of the following generalized type:

VRI/Number/Type Code

(a) Except as provided in 6.4.23.10(b), VRI represents the international vehicle registration identification code ([1]) of the country issuing the certificate;

(b) The number shall be assigned by the competent authority, and shall be unique and specific with regard to the particular design or shipment. The shipment approval identification mark shall be clearly related to the design approval identification mark;

(c) The following type codes shall be used in the order listed to indicate the types of approval certificates issued:

AF	Type A package design for fissile material
B(U)	Type B(U) package design (B(U) F if for fissile material)
B(M)	Type B(M) package design (B(M) F if for fissile material)
C	Type C package design (CF if for fissile material)
IF	Industrial package design for fissile material
S	Special form radioactive material
LD	Low dispersible radioactive material
T	Shipment
X	Special arrangement

In the case of package designs for non-fissile or fissile excepted uranium hexafluoride, where none of the above codes apply, then the following type codes shall be used:

H(U)	Unilateral approval
H(M)	Multilateral approval;

(d) For package design and special form radioactive material approval certificates not issued in accordance with the provisions of 1.6.5.2 to 1.6.5.4, and for low dispersible radioactive material approval certificates, the symbols '-96' shall be added to the type code.

6.4.23.10. These type codes shall be applied as follows:

(a) Each certificate and each package shall bear the appropriate identification mark, comprising the symbols prescribed in 6.4.23.9 (a), (b), (c) and (d) above, except that, for packages, only the applicable design type codes including, if applicable, the symbols '-96', shall appear following the second stroke, that is, the 'T' or 'X' shall not appear in the identification marking on the package. Where the design approval and shipment approval are combined, the applicable type codes do not need to be repeated.

For example:

A/132/B(M)F-96:	A Type B(M) package design approved for fissile material, requiring multilateral approval, for which the competent authority of Austria has assigned the design number 132 (to be marked on both the package and on the package design approval certificate);
A/132/B(M)F-96T:	The shipment approval issued for a package bearing the identification mark elaborated above (to be marked on the certificate only);
A/137/X:	A special arrangement approval issued by the competent authority of Austria, to which the number 137 has been assigned (to be marked on the certificate only);
A/139/IF-96:	An Industrial package design for fissile material approved by the competent authority of Austria, to which package design number 139 has been assigned (to be marked on both the package and on the package design approval certificate); and
A/145/H(U)-96:	A package design for fissile excepted uranium hexafluoride approved by the competent authority of Austria, to which package design number 145 has been assigned (to be marked on both the package and on the package design approval certificate);

([1]) See Vienna Convention on Road Traffic (1968).

(b) Where multilateral approval is effected by validation according to 6.4.23.16, only the identification mark issued by the country of origin of the design or shipment shall be used. Where multilateral approval is effected by issue of certificates by successive countries, each certificate shall bear the appropriate identification mark and the package whose design was so approved shall bear all appropriate identification marks.

For example:

A/132/B(M)F-96

CH/28/B(M)F-96

would be the identification mark of a package which was originally approved by Austria and was subsequently approved, by separate certificate, by Switzerland. Additional identification marks would be tabulated in a similar manner on the package;

(c) The revision of a certificate shall be indicated by a parenthetical expression following the identification mark on the certificate. For example, A/132/B(M)F-96(Rev. 2) would indicate revision 2 of the Austrian package design approval certificate; or A/132/B(M)F-96(Rev. 0) would indicate the original issuance of the Austrian package design approval certificate. For original issuances, the parenthetical entry is optional and other words such as 'original issuance' may also be used in place of 'Rev. 0'. Certificate revision numbers may only be issued by the country issuing the original approval certificate;

(d) Additional symbols (as may be necessitated by national requirements) may be added in brackets to the end of the identification mark; for example, A/132/B(M)F-96(SP503);

(e) It is not necessary to alter the identification mark on the packaging each time that a revision to the design certificate is made. Such re-marking shall be required only in those cases where the revision to the package design certificate involves a change in the letter type codes for the package design following the second stroke.

6.4.23.11. Each approval certificate issued by a competent authority for special form radioactive material or low dispersible radioactive material shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark;

(c) The issue date and an expiry date;

(d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the special form radioactive material or low dispersible radioactive material is approved;

(e) The identification of the special form radioactive material or low dispersible radioactive material;

(f) A description of the special form radioactive material or low dispersible radioactive material;

(g) Design specifications for the special form radioactive material or low dispersible radioactive material which may include references to drawings;

(h) A specification of the radioactive contents which includes the activities involved and which may include the physical and chemical form;

(i) A specification of the applicable quality assurance programme as required in 1.7.3;

(j) Reference to information provided by the applicant relating to specific actions to be taken prior to shipment;

(k) If deemed appropriate by the competent authority, reference to the identity of the applicant;

(l) Signature and identification of the certifying official.

6.4.23.12. Each approval certificate issued by a competent authority for a special arrangement shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark;

(c) The issue date and an expiry date;

(d) Mode(s) of transport;

(e) Any restrictions on the modes of transport, type of wagon, container, and any necessary routeing instructions;

(f) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the special arrangement is approved;

(g) The following statement:

'This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be carried.';

(h) References to certificates for alternative radioactive contents, other competent authority validation, or additional technical data or information, as deemed appropriate by the competent authority;

(i) Description of the packaging by a reference to the drawings or a specification of the design. If deemed appropriate by the competent authority, a reproducible illustration, not larger than 21 cm by 30 cm, showing the make-up of the package shall also be provided, accompanied by a brief description of the packaging, including materials of manufacture, gross mass, main outside dimensions and appearance;

(j) A specification of the authorized radioactive contents, including any restrictions on the radioactive contents which might not be obvious from the nature of the packaging. This shall include the physical and chemical forms, the activities involved (including those of the various isotopes, if appropriate), amounts in grams (for fissile material), and whether special form radioactive material or low dispersible radioactive material, if applicable;

(k) Additionally, for packages of fissile material:

(i) a detailed description of the authorized radioactive contents;

(ii) the value of the criticality safety index;

(iii) reference to the documentation that demonstrates the criticality safety of the contents;

(iv) any special features, on the basis of which the absence of water from certain void spaces has been assumed in the criticality assessment;

(v) any allowance (based on 6.4.11.4(b)) for a change in neutron multiplication assumed in the criticality assessment as a result of actual irradiation experience; and

(vi) the ambient temperature range for which the special arrangement has been approved;

(l) A detailed listing of any supplementary operational controls required for preparation, loading, carriage, unloading and handling of the consignment, including any special stowage provisions for the safe dissipation of heat;

(m) If deemed appropriate by the competent authority, reasons for the special arrangement;

(n) Description of the compensatory measures to be applied as a result of the shipment being under special arrangement;

(o) Reference to information provided by the applicant relating to the use of the packaging or specific actions to be taken prior to the shipment;

(p) A statement regarding the ambient conditions assumed for purposes of design if these are not in accordance with those specified in 6.4.8.4, 6.4.8.5 and 6.4.8.15, as applicable;

(q) Any emergency arrangements deemed necessary by the competent authority;

(r) A specification of the applicable quality assurance programme as required in 1.7.3;

(s) If deemed appropriate by the competent authority, reference to the identity of the applicant and to the identity of the carrier;

(t) Signature and identification of the certifying official.

6.4.23.13. Each approval certificate for a shipment issued by a competent authority shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark(s);

(c) The issue date and an expiry date;

(d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the shipment is approved;

(e) Any restrictions on the modes of transport, type of wagon, container, and any necessary routeing instructions;

(f) The following statement:

'This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be carried.';

(g) A detailed listing of any supplementary operational controls required for preparation, loading, carriage, unloading and handling of the consignment, including any special stowage provisions for the safe dissipation of heat or maintenance of criticality safety;

(h) Reference to information provided by the applicant relating to specific actions to be taken prior to shipment;

(i) Reference to the applicable design approval certificate(s);

(j) A specification of the actual radioactive contents, including any restrictions on the radioactive contents which might not be obvious from the nature of the packaging. This shall include the physical and chemical forms, the total activities involved (including those of the various isotopes, if appropriate), amounts in grams (for fissile material), and whether special form radioactive material or low dispersible radioactive material, if applicable;

(k) Any emergency arrangements deemed necessary by the competent authority;

(l) A specification of the applicable quality assurance programme as required in 1.7.3;

(m) If deemed appropriate by the competent authority, reference to the identity of the applicant;

(n) Signature and identification of the certifying official.

6.4.23.14. Each approval certificate of the design of a package issued by a competent authority shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark;

(c) The issue date and an expiry date;

(d) Any restriction on the modes of transport, if appropriate;

(e) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the design is approved;

(f) The following statement:

'This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.';

(g) References to certificates for alternative radioactive contents, other competent authority validation, or additional technical data or information, as deemed appropriate by the competent authority;

(h) A statement authorizing shipment where shipment approval is required under 5.1.5.2.2, if deemed appropriate;

(i) Identification of the packaging;

(j) Description of the packaging by a reference to the drawings or specification of the design. If deemed appropriate by the competent authority, a reproducible illustration, not larger than 21 cm by 30 cm, showing the make-up of the package should also be provided, accompanied by a brief description of the packaging, including materials of manufacture, gross mass, main outside dimensions and appearance;

(k) Specification of the design by reference to the drawings;

(l) A specification of the authorized radioactive content, including any restrictions on the radioactive contents which might not be obvious from the nature of the packaging. This shall include the physical and chemical forms, the activities involved (including those of the various isotopes, if appropriate), amounts in grams (for fissile material), and whether special form radioactive material or low dispersible radioactive material, if applicable;

(m) Additionally, for packages of fissile material:

(i) a detailed description of the authorized radioactive contents;

(ii) the value of the criticality safety index;

(iii) reference to the documentation that demonstrates the criticality safety of the contents;

(iv) any special features, on the basis of which the absence of water from certain void spaces has been assumed in the criticality assessment;

(v) any allowance (based on 6.4.11.4(b)) for a change in neutron multiplication assumed in the criticality assessment as a result of actual irradiation experience; and

(vi) the ambient temperature range for which the package design has been approved;

(n) For Type B(M) packages, a statement specifying those provisions of 6.4.7.5, 6.4.8.4, 6.4.8.5 and 6.4.8.8 to 6.4.8.15 with which the package does not conform and any amplifying information which may be useful to other competent authorities;

(o) A detailed listing of any supplementary operational controls required for preparation, loading, carriage, unloading and handling of the consignment, including any special stowage provisions for the safe dissipation of heat;

(p) Reference to information provided by the applicant relating to the use of the packaging or specific actions to be taken prior to shipment;

(q) A statement regarding the ambient conditions assumed for purposes of design if these are not in accordance with those specified in 6.4.8.4, 6.4.8.5 and 6.4.8.15, as applicable;

(r) A specification of the applicable quality assurance programme as required in 1.7.3;

(s) Any emergency arrangements deemed necessary by the competent authority;

(t) If deemed appropriate by the competent authority, reference to the identity of the applicant;

(u) Signature and identification of the certifying official.

6.4.23.15. The competent authority shall be informed of the serial number of each packaging manufactured to a design approved by them. The competent authority shall maintain a register of such serial numbers.

6.4.23.16. Multilateral approval may be by validation of the original certificate issued by the competent authority of the country of origin of the design or shipment. Such validation may take the form of an endorsement on the original certificate or the issuance of a separate endorsement, annex, supplement, etc., by the competent authority of the country through or into which the shipment is made.

CHAPTER 6.5

Requirements for the construction and testing of intermediate bulk containers

6.5.1. *General requirements applicable to all types of IBCs*

6.5.1.1. Scope

6.5.1.1.1. The requirements of this Chapter apply to intermediate bulk containers (IBCs) the use of which is expressly authorized for the carriage of certain dangerous goods according to the packing methods indicated in column 8 of Table A in Chapter 3.2. Portable tanks or tankcontainers which meet the requirements of Chapter 6.7 or 6.8 are not considered to be IBCs. IBCs which meet the requirements of this Chapter are not considered to be containers for the purposes of this Directive. The letters IBC only will be used in the rest of the text to refer to intermediate bulk containers.

6.5.1.1.2. Exceptionally, IBCs and their service equipment not conforming strictly to the requirements herein, but having acceptable alternatives, may be considered by the competent authority for approval. In addition, in order to take into account progress in science and technology, the use of alternative arrangements which offer at least equivalent safety in use in respect of compatibility with the properties of the substances carried and equivalent or superior resistance to impact, loading and fire, may be considered by the competent authority.

6.5.1.1.3. The construction, equipment, testing, marking and operation of IBCs shall be subject to acceptance by the competent authority of the country in which the IBCs are approved.

6.5.1.2. (Reserved)

6.5.1.3. (Reserved)

6.5.1.4. Designatory code system for IBCs

6.5.1.4.1. The code shall consist of two Arabic numerals as specified in the Table under (a); followed by a capital letter(s) corresponding to the materials specified in (b); followed, when specified in an individual section, by an Arabic numeral indicating the category of IBC.

(a)

Type	For solids, loaded or discharged		For liquids
	by gravity	under pressure of more than 10 kPa (0,1 bar)	
Rigid	11	21	31
Flexible	13	—	—

(b) Materials

A. Steel (all types and surface treatments)

B. Aluminium

C. Natural wood

D. Plywood

F. Reconstituted wood

G. Fibreboard

H. Plastics material

L. Textile

M. Paper, multiwall

N. Metal (other than steel or aluminium).

6.5.1.4.2. For composite IBCs, two capital letters in Latin characters shall be used in sequence in the second position of the code. The first shall indicate the material of the inner receptacle of the IBC and the second that of the outer packaging of the IBC.

6.5.1.4.3. The following types and codes of IBC are assigned:

Material	Category	Code	Sub-section
Metal			6.5.3.1
A. Steel	for solids, loaded or discharged by gravity	11A	
	for solids, loaded or discharged under pressure	21A	
	for liquids	31A	
B. Aluminium	for solids, loaded or discharged by gravity	11B	
	for solids, loaded or discharged under pressure	21B	
	for liquids	31B	

Material	Category	Code	Sub-section
N. Other than steel or aluminium	for solids, loaded or discharged by gravity	11N	
	for solids, loaded or discharged under pressure	21N	
	for liquids	31N	
Flexible			6.5.3.2
H. Plastics	woven plastics without coating or liner	13H1	
	woven plastics, coated	13H2	
	woven plastics with liner	13H3	
	woven plastics, coated and with liner	13H4	
	plastics film	13H5	
L. Textile	without coating or liner	13L1	
	coated	13L2	
	with liner	13L3	
	coated and with liner	13L4	
M. Paper	multiwall	13M1	
	multiwall, water resistant	13M2	
H. Rigid plastics	for solids, loaded or discharged by gravity, fitted with structural equipment	11H1	6.5.3.3
	for solids, loaded or discharged by gravity, freestanding	11H2	
	for solids, loaded or discharged under pressure, fitted with structural equipment	21H1	
	for solids, loaded or discharged under pressure, freestanding	21H2	
	for liquids, fitted with structural equipment	31H1	
	for liquids, freestanding	31H2	
HZ. Composite with plastics inner receptacle ([a])	for solids, loaded or discharged by gravity, with rigid plastics receptacle	11HZ1	6.5.3.4
	for solids, loaded or discharged by gravity, with flexible plastics receptacle	11HZ2	
	for solids, loaded or discharged under pressure, with rigid plastics receptacle	21HZ1	
	for solids, loaded or discharged under pressure, with flexible plastics receptacle	21HZ2	
	for liquids, with rigid plastics receptacle	31HZ1	
	for liquids, with flexible plastics receptacle	31HZ2	

Material	Category	Code	Sub-section
G. Fibreboard	for solids, loaded or discharged by gravity	11G	6.5.3.5
Wooden			6.5.3.6
C. Natural wood	for solids, loaded or discharged by gravity with inner liner	11C	
D. Plywood	for solids, loaded or discharged by gravity with inner liner	11D	
F. Reconstituted wood	for solids, loaded or discharged by gravity with inner liner	11F	

([a]) The code shall be completed by replacing the letter Z by a capital letter in accordance with 6.5.1.4.1 (b) to indicate the nature of the material used for the outer casing.

6.5.1.4.4. The letter 'W' may follow the IBC code. The letter 'W' signifies that the IBC, although of the same type indicated by the code, is manufactured to a specification different from those in 6.5.3 and is considered equivalent in accordance with the requirements in 6.5.1.1.2.

6.5.1.5. Construction requirements

6.5.1.5.1. IBCs shall be resistant to or adequately protected from deterioration due to the external environment.

6.5.1.5.2. IBCs shall be so constructed and closed that none of the contents can escape under normal conditions of carriage including the effect of vibration, or by changes in temperature, humidity or pressure.

6.5.1.5.3. IBCs and their closures shall be constructed of materials compatible with their contents, or be protected internally, so that they are not liable:

(a) to be attacked by the contents so as to make their use dangerous;

(b) to cause the contents to react or decompose, or form harmful or dangerous compounds with the IBCs.

6.5.1.5.4. Gaskets, where used, shall be made of materials not subject to attack by the contents of the IBCs.

6.5.1.5.5. All service equipment shall be so positioned or protected as to minimize the risk of escape of the contents owing to damage during handling and carriage.

6.5.1.5.6. IBCs, their attachments and their service and structural equipment shall be designed to withstand, without loss of contents, the internal pressure of the contents and the stresses of normal handling and carriage. IBCs intended for stacking shall be designed for stacking. Any lifting or securing features of IBCs shall be of sufficient strength to withstand the normal conditions of handling and carriage without gross distortion or failure and shall be so positioned that no undue stress is caused in any part of the IBC.

6.5.1.5.7. Where an IBC consists of a body within a framework it shall be so constructed that:

(a) the body does not chafe or rub against the framework so as to cause material damage to the body;

(b) the body is retained within the framework at all times;

(c) the items of equipment are fixed in such a way that they cannot be damaged if the connections between body and frame allow relative expansion or movement.

6.5.1.5.8. Where a bottom discharge valve is fitted, it shall be capable of being made secure in the closed position and the whole discharge system shall be suitably protected from damage. Valves having lever closures shall be able to be secured against accidental opening and the open or closed position shall be readily apparent. For IBCs containing liquids, a secondary means of sealing the discharge aperture shall also be provided, e.g. a blank flange or equivalent device.

6.5.1.5.9. Each IBC shall be capable of passing the relevant performance tests.

6.5.1.6. Testing, certification and inspection

6.5.1.6.1. Quality assurance: the IBCs shall be manufactured and tested under a quality assurance programme which satisfies the competent authority, in order to ensure that each manufactured IBC meets the requirements of this Chapter.

6.5.1.6.2. Test requirements: IBCs shall be subject to design type tests and, if applicable, to initial and periodic tests in accordance with 6.5.4.14.

6.5.1.6.3. Certification: in respect of each design type of IBC a certificate and mark (as in 6.5.2) shall be issued attesting that the design type, including its equipment, meets the test requirements.

6.5.1.6.4. Inspection: every metal, rigid plastics and composite IBC shall be inspected to the satisfaction of the competent authority

(a) before it is put into service, and thereafter at intervals not exceeding five years, with regard to:

(i) conformity to design type including marking;

(ii) internal and external condition;

(iii) proper functioning of service equipment.

Thermal insulation, if any, need be removed only to the extent necessary for a proper examination of the body of the IBC.

(b) at intervals of not more than two and a half years, with regard to:

(i) external condition;

(ii) proper functioning of service equipment.

Thermal insulation, if any, need be removed only to the extent necessary for a proper examination of the body of the IBC.

A report of each inspection shall be kept by the owner at least until the date of the next inspection.

6.5.1.6.5. When the structure of an IBC is impaired as a result of impact, (e.g. accident) or any other cause, it shall be repaired and then subjected to the full testing and inspection as set out in 6.5.4.14.3 and 6.5.1.6.4 (a).

6.5.1.6.6. The competent authority may at any time require proof, by tests in accordance with this Chapter, that IBCs meet the requirements of the design type tests.

6.5.2. *Marking*

6.5.2.1. Primary marking

6.5.2.1.1. Each IBC manufactured and intended for use according to this Chapter shall bear markings which are durable, legible and placed in a location so as to be readily visible. Letters, numerals and symbols shall be at least 12 mm high and shall show:

(a) The United Nations packaging symbol: 

For metal IBCs on which the marking is stamped or embossed, the capital letters 'UN' may be applied instead of the symbol;

(b) The code designating the type of IBC according to 6.5.1.4;

(c) A capital letter designating the packing group(s) for which the design type has been approved:

(i) X for Packing groups I, II and III (IBCs for solids only);

(ii) Y for Packing groups II and III;

(iii) Z for Packing group III only;

(d) The month and year (last two digits) of manufacture;

(e) The State authorizing the allocation of the mark; indicated by the distinguishing sign for motor vehicles in international traffic ([1]);

(f) The name or symbol of the manufacturer and other identification of the IBC as specified by the competent authority;

(g) The stacking test load in kg. For IBCs not designed for stacking, the Figure '0' shall be shown;

(h) The maximum permissible gross mass or, for flexible IBCs, the maximum permissible load, in kg.

The primary marking required above shall be applied in the sequence of the subparagraphs below. The marking required by 6.5.2.2 and any further marking authorized by a competent authority shall still enable the parts of the mark to be correctly identified.

Examples of markings for various types of IBC in accordance with (a) to (h) above:

un	11A/Y/0289 NL/Mulder 007/5500/1500	For a metal IBC for solids discharged for instance by gravity and made from steel/for Packing Groups II and III/ manufactured in February 1989/authorized by the Netherlands/manufactured by Mulder and of a design type to which the competent authority has allocated serial number 007/the stacking test load in kg/the maximum permissible gross mass in kg.
un	13H3/Z/0389 F/Meunier 1713/0/1500	For a flexible IBC for solids discharged for instance by gravity and made from woven plastics with a liner/not designed to be stacked.
un	31H1/Y/0489 GB/9099/10800/1200	For a rigid plastics IBC for liquids made from plastics with structural equipment withstanding the stack load.
un	31HA1/Y/0591 D/Muller/1683/10800/1200	For a composite IBC for liquids with a rigid plastics inner receptacle and a steel outer casing.
un	11C/X/0193 S/Aurigny/9876/3000/910	For a wooden IBC for solids with an inner liner authorized for Packing Group I solids.

6.5.2.2. Additional marking

6.5.2.2.1. Each IBC shall bear the markings required in 6.5.2.1 and, in addition, the following information which may appear on a corrosion-resistant plate permanently attached in a place readily accessible for inspection:

Additional marking	Category of IBC				
	Metal	Rigid Plastics	Composite	Fibreboard	Wooden
Capacity in litres ([a]) at 20 °C	X	X	X		
Tare mass in kg ([a])	X	X	X	X	X
Test (gauge) pressure, in kPa or bar ([a]), if applicable		X	X		
Maximum permissible loading/discharge pressure in kPa or bar ([a]), if applicable	X	X	X		

([1]) Distinguishing sign for motor vehicles in international traffic prescribed in Vienna Convention on Road Traffic (1968).

Additional marking	Category of IBC				
	Metal	Rigid Plastics	Composite	Fibreboard	Wooden
Body material and its minimum thickness in mm	X				
Date of last leakproofness test, if applicable (month and year)	X	X	X		
Date of last inspection (month and year)	X	X	X		
Serial number of the manufacturer	X				

([a]) The unit used shall be indicated.

6.5.2.2.2. In addition to the markings required in 6.5.2.1, flexible IBCs may bear a pictogram indicating recommended lifting methods.

6.5.2.2.3. The inner receptacle of composite IBCs shall be marked with at least the following information:

(a) The name or symbol of the manufacturer and other identification of the IBC as specified by the competent authority as in 6.5.2.1.1 (f);

(b) The date of manufacture, as in 6.5.2.1.1 (d);

(c) The distinguishing sign of the State authorizing the allocation of the mark, as in 6.5.2.1.1 (e).

6.5.2.2.4. Where an IBC is designed in such a manner that the outer casing is intended to be dismantled for carriage when empty (such as for return of the IBC for reuse to the original consignor), each of the parts intended to be detached when so dismantled shall be marked with the month and year of manufacture and the name or symbol of the manufacturer and other identification of the IBC as specified by the competent authority (see 6.5.2.1.1(f)).

6.5.2.3. Conformity with the design type:

the marking indicates that IBCs correspond to a successfully tested design type and that the requirements referred to in the certificate have been met.

6.5.3. *Specific requirements for IBCs*

6.5.3.1. Specific requirements for metal IBCs

6.5.3.1.1. These requirements apply to metal IBCs intended for the carriage of solids and liquids. There are three categories of metal IBCs:

(a) those for solids which are loaded or discharged by gravity (11A, 11B, 11N);

(b) those for solids which are loaded or discharged at a gauge pressure greater than 10 kPa (0,1 bar) (21A, 21B, 21N);

(c) those for liquids (31A, 31B, 31N).

6.5.3.1.2. Bodies shall be made of suitable ductile metal in which the weldability has been fully demonstrated. Welds shall be skilfully made and afford complete safety. Low-temperature performance of the material shall be taken into account when appropriate.

6.5.3.1.3. Care shall be taken to avoid damage by galvanic action due to the juxtaposition of dissimilar metals.

6.5.3.1.4. Aluminium IBCs intended for the carriage of flammable liquids shall have no movable parts, such as covers, closures, etc., made of unprotected steel liable to rust, which might cause a dangerous reaction by coming into frictional or percussive contact with the aluminium.

6.5.3.1.5. Metal IBCs shall be made of metals which meet the following requirements:

(a) for steel the elongation at fracture, in %, shall not be less than $\frac{10000}{Rm}$ with an absolute minimum of 20 %;

where Rm = guaranteed minimum tensile strength of the steel to be used, in N/mm^2;

(b) for aluminium and alloys thereof the elongation at fracture, in %, shall not be less than $\frac{10000}{6Rm}$ with an absolute minimum of 8 %.

Specimens used to determine the elongation at fracture shall be taken transversely to the direction of rolling and be so secured that:

$$L_o = 5d \quad \text{or} \quad L_o = 5{,}65 \sqrt{A}$$

where:

L_o = gauge length of the specimen before the test

d = diameter

A = cross-sectional area of test specimen.

6.5.3.1.6. Minimum wall thickness:

(a) for a reference steel having a product of $Rm \times A_o = 10\ 000$, the wall thickness shall not be less than:

Capacity (C) in litres	Wall thickness (T) in mm			
	Types 11A, 11B, 11N		Types 21A, 21B, 21N, 31A, 31B, 31N	
	Unprotected	Protected	Unprotected	Protected
C ≤ 1 000	2,0	1,5	2,5	2,0
1 000 < C ≤ 2 000	T = C/2 000 + 1,5	T = C/2 000 + 1,0	T = C/2 000 + 2,0	T = C/2 000 + 1,5
2 000 < C ≤ 3 000	T = C/2 000 + 1,5	T = C/2 000 + 1,0	T = C/1 000 + 1,0	T = C/2 000 + 1,5

where:

A_o = minimum elongation (as a percentage) of the reference steel to be used on fracture under tensile stress (see 6.5.3.1.5);

(b) for metals other than the reference steel described in (a), the minimum wall thickness is given by the following equivalence formula:

$$e_1 = \frac{21{,}4 \times e_o}{\sqrt[3]{Rm_1 \times A_1}}$$

where:

e_1 = required equivalent wall thickness of the metal to be used (in mm);

e_o = required minimum wall thickness for the reference steel (in mm);

Rm_1 = guaranteed minimum tensile strength of the metal to be used (in N/mm^2) (see (c));

A_1 = minimum elongation (as a percentage) of the metal to be used on fracture under tensile stress (see 6.5.3.1.5).

However, in no case shall the wall thickness be less than 1,5 mm.

(c) For purposes of the calculation described in (b), the guaranteed minimum tensile strength of the metal to be used (Rm_1) shall be the minimum value according to national or international material standards. However, for austenitic steels, the specified minimum value for Rm according to the material standards may be increased by up to 15 % when a greater value is attested in the material inspection certificate. When no material standard exists for the material in question, the value of Rm shall be the minimum value attested in the material inspection certificate.

6.5.3.1.7. Pressure-relief requirements: IBCs for liquids shall be capable of releasing a sufficient amount of vapour in the event of fire engulfment to ensure that no rupture of the body will occur. This can be achieved by conventional pressure relief devices or by other constructional means. The start-to-discharge pressure shall not be higher than 65 kPa (0.65 bar) and no lower than the total gauge pressure experienced in the IBC (i.e. the vapour pressure of the filling substance plus the partial pressure of the air or other inert gases, minus 100 kPa (1 bar)) at 55° C, determined on the basis of a maximum degree of filling as defined in 4.1.1.4. The required relief devices shall be fitted in the vapour space.

6.5.3.2. Specific requirements for flexible IBCs

6.5.3.2.1. These requirements apply to flexible IBCs of the following types:

13H1	woven plastics without coating or liner
13H2	woven plastics, coated
13H3	woven plastics with liner
13H4	woven plastics, coated and with liner
13H5	plastics film
13L1	textile without coating or liner
13L2	textile, coated
13L3	textile with liner
13L4	textile, coated and with liner
13M1	paper, multiwall
13M2	paper, multiwall, water resistant

Flexible IBCs are intended for the carriage of solids only.

6.5.3.2.2. Bodies shall be manufactured from suitable materials. The strength of the material and the construction of the flexible IBC shall be appropriate to its capacity and its intended use.

6.5.3.2.3. All materials used in the construction of flexible IBCs of types 13M1 and 13M2 shall, after complete immersion in water for not less than 24 hours, retain at least 85 % of the tensile strength as measured originally on the material conditioned to equilibrium at 67 % relative humidity or less.

6.5.3.2.4. Seams shall be formed by stitching, heat sealing, gluing or any equivalent method. All stitched seam-ends shall be secured.

6.5.3.2.5. Flexible IBCs shall provide adequate resistance to ageing and to degradation caused by ultraviolet radiation or the climatic conditions, or by the substance contained, thereby rendering them appropriate to their intended use.

6.5.3.2.6. For flexible plastics IBCs where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the body. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.5.3.2.7. Additives may be incorporated into the material of the body to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.5.3.2.8. No material recovered from used receptacles shall be used in the manufacture of IBC bodies. Production residues or scrap from the same manufacturing process may, however, be used. Component parts such as fittings and pallet bases may also be used provided such components have not in any way been damaged in previous use.

6.5.3.2.9. When filled, the ratio of height to width shall be not more than 2:1.

6.5.3.2.10. The liner shall be made of a suitable material. The strength of the material used and the construction of the liner shall be appropriate to the capacity of the IBC and the intended use. Joins and closures shall be siftproof and capable of withstanding pressures and impacts liable to occur under normal conditions of handling and carriage.

6.5.3.3. Specific requirements for rigid plastics IBCs

6.5.3.3.1. These requirements apply to rigid plastics IBCs for the carriage of solids or liquids. Rigid plastics IBCs are of the following types:

11H1	fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for solids which are loaded or discharged by gravity
11H2	freestanding, for solids which are loaded or discharged by gravity
21H1	fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for solids which are loaded or discharged under pressure
21H2	freestanding, for solids which are loaded or discharged under pressure
31H1	fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for liquids
31H2	freestanding, for liquids.

6.5.3.3.2. The body shall be manufactured from suitable plastics material of known specifications and be of adequate strength in relation to its capacity and its intended use. The material shall be adequately resistant to ageing and to degradation caused by the substance contained or, where relevant, by ultraviolet radiation. Low temperature performance shall be taken into account when appropriate. Any permeation of the substance contained shall not constitute a danger under normal conditions of carriage.

6.5.3.3.3. Where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the body. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.5.3.3.4. Additives may be incorporated in the material of the body to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.5.3.3.5. No used material other than production residues or regrind from the same manufacturing process may be used in the manufacture of rigid plastics IBCs.

6.5.3.3.6. A relief device shall be fitted to each IBC intended for the carriage of liquids, capable of releasing sufficient vapour to prevent the body of the IBC from rupturing if it is subjected to an internal pressure in excess of that for which it was hydraulically tested. This can be achieved by conventional relief devices or by other means of construction. The start-to-discharge pressure shall not be higher than the pressure used in the hydraulic pressure test.

6.5.3.4. Specific requirements for composite IBCs with plastics inner receptacles

6.5.3.4.1. These requirements apply to composite IBCs for the carriage of solids and liquids of the following types:

11HZ1	Composite IBCs with a rigid plastics inner receptacle, for solids loaded or discharged by gravity
11HZ2	Composite IBCs with a flexible plastics inner receptacle, for solids loaded or discharged by gravity
21HZ1	Composite IBCs with a rigid plastics inner receptacle, for solids loaded or discharged under pressure
21HZ2	Composite IBCs with a flexible plastics inner receptacle, for solids loaded or discharged under pressure
31HZ1	Composite IBCs with a rigid plastics inner receptacle, for liquids
31HZ2	Composite IBCs with a flexible plastics inner receptacle, for liquids.

This code shall be completed by replacing the letter Z by a capital letter in accordance with 6.5.1.4.1 (b) to indicate the nature of the material used for the outer casing.

6.5.3.4.2. The inner receptacle is not intended to perform a containment function without its outer casing. A 'rigid' inner receptacle is a receptacle which retains its general shape when empty without closures in place and without benefit of the outer casing. Any inner receptacle that is not 'rigid' is considered to be 'flexible'.

6.5.3.4.3. The outer casing normally consists of rigid material formed so as to protect the inner receptacle from physical damage during handling and carriage but is not intended to perform the containment function. It includes the base pallet where appropriate.

6.5.3.4.4. A composite IBC with a fully enclosing outer casing shall be so designed that the integrity of the inner receptacle may be readily assessed following the leakproofness and hydraulic pressure tests.

6.5.3.4.5. IBCs of type 31HZ2 shall be limited to a capacity of not more than 1 250 litres.

6.5.3.4.6. The inner receptacle shall be manufactured from suitable plastics material of known specifications and be of adequate strength in relation to its capacity and its intended use. The material shall be adequately resistant to ageing and to degradation caused by the substance contained or, where relevant, by ultraviolet radiation. Low temperature performance shall be taken into account when appropriate. Any permeation of the substance contained shall not constitute a danger under normal conditions of carriage.

NOTE: Other polymeric materials, such as rubber etc. are considered to be plastics within the meaning of this provision.

6.5.3.4.7. Where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the inner receptacle. Where use is made of carbon black, pigments or inhibitors, other than those used in the manufacture of the tested design type, retesting may be waived if changes in carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.5.3.4.8. Additives may be incorporated in the material of the inner receptacle to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.5.3.4.9. No used material other than production residues or regrind from the same manufacturing process may be used in the manufacture of inner receptacles.

6.5.3.4.10. A relief device shall be fitted to each IBC intended for the carriage of liquids, capable of releasing sufficient vapour to prevent the inner receptacle of the IBC from rupturing if it is subjected to an internal pressure in excess of that for which it was hydraulically tested. This can be achieved by conventional relief devices or by other means of construction.

6.5.3.4.11. The inner receptacle of IBCs type 31HZ2 shall consist of at least three plies of film.

6.5.3.4.12. The strength of the material and the construction of the outer casing shall be appropriate to the capacity of the composite IBC and its intended use.

6.5.3.4.13. The outer casing shall be free of any projection that might damage the inner receptacle.

6.5.3.4.14. Metal outer casings shall be constructed of a suitable metal of adequate thickness.

6.5.3.4.15. Outer casings of natural wood shall be of well seasoned wood, commercially dry and free from defects that would materially lessen the strength of any part of the casing. The tops and bottoms may be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type.

6.5.3.4.16. Outer casings of plywood shall be made of well seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the casing. All adjacent plies shall be glued with water resistant adhesive. Other suitable materials may be used with plywood for the construction of casings. Casings shall be firmly nailed or secured to corner posts or ends or be assembled by equally suitable devices.

6.5.3.4.17. The walls of outer casings of reconstituted wood shall be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type. Other parts of the casings may be made of other suitable material.

6.5.3.4.18. For fibreboard outer casings, strong and good quality solid or double-faced corrugated fibreboard (single or multiwall) shall be used appropriate to the capacity of the casing and to its intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m^2 — see ISO 535:1991. It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting of corrugated fibreboard shall be firmly glued to the facings.

6.5.3.4.19. The ends of fibreboard outer casings may have a wooden frame or be entirely of wood. Reinforcements of wooden battens may be used.

6.5.3.4.20. Manufacturing joins in the fibreboard outer casing shall be taped, lapped and glued, or lapped and stitched with metal staples. Lapped joins shall have an appropriate overlap. Where closing is effected by gluing or taping, a water resistant adhesive shall be used.

6.5.3.4.21. Where the outer casing is of plastics material, the relevant requirements of 6.5.3.4.6 to 6.5.3.4.9 apply, on the understanding that, in this case, the requirements applicable to the inner receptacle are applicable to the outer casing of composite IBCs.

6.5.3.4.22. The outer casing of a 31HZ2 shall enclose the inner receptacle on all sides.

6.5.3.4.23. Any integral pallet base forming part of an IBC or any detachable pallet shall be suitable for mechanical handling with the IBC filled to its maximum permissible gross mass.

6.5.3.4.24. The pallet or integral base shall be designed so as to avoid any protrusion of the base of the IBC that might be liable to damage in handling.

6.5.3.4.25. The outer casing shall be secured to any detachable pallet to ensure stability in handling and carriage. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the IBC.

6.5.3.4.26. Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the inner receptacle.

6.5.3.4.27. Where IBCs are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner. Such IBCs shall be designed so that the load is not supported by the inner receptacle.

6.5.3.5. Specific requirements for fibreboard IBCs

6.5.3.5.1. These requirements apply to fibreboard IBCs for the carriage of solids which are loaded or discharged by gravity. Fibreboard IBCs are of the following type: 11G.

6.5.3.5.2. Fibreboard IBCs shall not incorporate top lifting devices.

6.5.3.5.3. The body shall be made of strong and good quality solid or double-faced corrugated fibreboard (single or multiwall), appropriate to the capacity of the IBC and to its intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over a period of 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m^2 — see ISO 535:1991. It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting or corrugated fibreboard shall be firmly glued to the facings.

6.5.3.5.4. The walls, including top and bottom, shall have a minimum puncture resistance of 15 J measured according to ISO 3036:1975.

6.5.3.5.5. Manufacturing joins in the body of IBCs shall be made with an appropriate overlap and shall be taped, glued, stitched with metal staples or fastened by other means at least equally effective. Where joins are effected by gluing or taping, a water resistant adhesive shall be used. Metal staples shall pass completely through all pieces to be fastened and be formed or protected so that any inner liner cannot be abraded or punctured by them.

6.5.3.5.6. The liner shall be made of a suitable material. The strength of the material used and the construction of the liner shall be appropriate to the capacity of the IBC and the intended use. Joins and closures shall be siftproof and capable of withstanding pressures and impacts liable to occur under normal conditions of handling and carriage.

6.5.3.5.7. Any integral pallet base forming part of an IBC or any detachable pallet shall be suitable for mechanical handling with the IBC filled to its maximum permissible gross mass.

6.5.3.5.8. The pallet or integral base shall be designed so as to avoid any protrusion of the base of the IBC that might be liable to damage in handling.

6.5.3.5.9. The body shall be secured to any detachable pallet to ensure stability in handling and carriage. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the IBC.

6.5.3.5.10. Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.5.3.5.11. Where IBCs are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.5.3.6. Specific requirements for wooden IBCs

6.5.3.6.1. These requirements apply to wooden IBCs for the carriage of solids which are loaded or discharged by gravity. Wooden IBCs are of the following types:

11C	Natural wood with inner liner
11D	Plywood with inner liner
11F	Reconstituted wood with inner liner.

6.5.3.6.2. Wooden IBCs shall not incorporate top lifting devices.

6.5.3.6.3. The strength of the materials used and the method of construction of the body shall be appropriate to the capacity and intended use of the IBC.

6.5.3.6.4. Natural wood shall be well seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the IBC. Each part of the IBC shall consist of one piece or be equivalent thereto. Parts are considered equivalent to one piece when a suitable method of glued assembly is used as for instance Lindermann joint, tongue and groove joint, ship lap or rabbet joint; or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used.

6.5.3.6.5. Bodies of plywood shall be at least 3-ply. They shall be made of well seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the body. All adjacent plies shall be glued with water resistant adhesive. Other suitable materials may be used with plywood for the construction of the body.

6.5.3.6.6. Bodies of reconstituted wood shall be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type.

6.5.3.6.7. IBCs shall be firmly nailed or secured to corner posts or ends or be assembled by equally suitable devices.

6.5.3.6.8. The liner shall be made of a suitable material. The strength of the material used and the construction of the liner shall be appropriate to the capacity of the IBC and the intended use. Joins and closures shall be siftproof and capable of withstanding pressures and impacts liable to occur under normal conditions of handling and carriage.

6.5.3.6.9. Any integral pallet base forming part of an IBC or any detachable pallet shall be suitable for mechanical handling with the IBC filled to its maximum permissible gross mass.

6.5.3.6.10. The pallet or integral base shall be designed so as to avoid any protrusion of the base of the IBC that might be liable to damage in handling.

6.5.3.6.11. The body shall be secured to any detachable pallet to ensure stability in handling and carriage. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the IBC.

6.5.3.6.12. Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.5.3.6.13. Where IBCs are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.5.4. *Test requirements for IBCs*

6.5.4.1. Performance and frequency of tests

6.5.4.1.1. The design type of each IBC shall be tested and approved in accordance with procedures established by the competent authority for each IBC design type before such an IBC is used. An IBC design type is defined by the design, size, material and thickness, manner of construction and means of filling and discharging but may include various surface treatments. It also includes IBCs which differ from the design type only in their lesser external dimensions.

6.5.4.1.2. Tests shall be carried out on IBCs prepared for carriage. IBCs shall be filled as indicated in the relevant sections. The substances to be carried in the IBCs may be replaced by other substances except where this would invalidate the results of the tests. For solids, when another substance is used it shall have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass, so long as they are placed so that the test results are not affected.

6.5.4.1.3. In the drop tests for liquids, when another substance is used, its relative density and viscosity shall be similar to those of the substance to be carried. Water may also be used for the liquid drop test under the following conditions:

(a) where the substances to be carried have a relative density not exceeding 1.2, the drop heights shall be those shown in the table in 6.5.4.9.4;

(b) where the substances to be carried have a relative density exceeding 1.2, the drop height shall be calculated on the basis of the relative density (d) of the substance to be carried rounded up to the first decimal as follows:

Packing Group I	Packing Group II	Packing Group III
d × 1,5 m	d × 1,0 m	d × 0,67 m

6.5.4.2. Design type tests

6.5.4.2.1. One IBC of each design type, size, wall thickness and manner of construction shall be successfully submitted to the tests listed in the order shown in 6.5.4.3.5 and as set out in 6.5.4.5 to 6.5.4.12. These design type tests shall be carried out as required by the competent authority.

6.5.4.2.2. The competent authority may permit the selective testing of IBCs which differ only in minor respects from a tested type, e.g. with small reductions in external dimensions.

6.5.4.2.3. If detachable pallets are used in the tests, the test report issued in accordance with 6.5.4.13 shall include a technical description of the pallets used.

6.5.4.3. Preparation of IBCs for testing

6.5.4.3.1. Paper and fibreboard IBCs and composite IBCs with fibreboard outer casings shall be conditioned for at least 24 hours in an atmosphere having a controlled temperature and relative humidity (r.h.). There are three options, one of which shall be chosen. The preferred atmosphere is 23 ± 2 °C and 50 % ± 2 % r.h. The two other options are 20 ± 2 °C and 65 % ± 2 % r.h.; or 27 ± 2 °C and 65 % ± 2 % r.h.

NOTE: Average values shall fall within these limits. Short-term fluctuations and measurement limitations may cause individual measurements to vary by up to ± 5 % relative humidity without significant impairment of test reproducibility.

6.5.4.3.2. Additional steps shall be taken to ascertain that the plastics material used in the manufacture of rigid plastics IBCs (types 31H1 and 31H2) and composite IBCs (types 31HZ1 and 31HZ2) complies respectively with the requirements in 6.5.3.3.2 to 6.5.3.3.4 and 6.5.3.4.6 to 6.5.3.4.9.

6.5.4.3.3. To prove there is sufficient chemical compatibility with the contained goods, the sample IBC shall be subjected to a preliminary storage for six months, during which the samples shall remain filled with the substances they are intended to contain or with substances which are known to have at least as severe a stress-cracking, weakening or molecular degradation influence on the plastics materials in question, and after which the samples shall be submitted to the applicable tests listed in the table in 6.5.4.3.5.

6.5.4.3.4. Where the satisfactory behaviour of the plastics material has been established by other means, the above compatibility test may be dispensed with. Such procedures shall be at least equivalent to the above compatibility test and recognized by the competent authority.

6.5.4.3.5. Design type tests required and sequential order

Type of IBC	Bottom lift	Top lift ([a])	Stacking ([b])	Leakproof-ness	Hydraulic pressure	Drop	Tear	Topple	Righting ([c])
Metal:									
11A, 11B, 11N	1st ([a])	2nd	3rd	—	—	4th ([e])	—	—	—
21A, 21B,21N, 31A, 31B, 31N	1st ([a])	2nd	3rd	4th	5th	6th ([e])	—	—	—
Flexible ([d])	—	X ([c])	X	—	—	X	X	X	X
Rigid plastics:									
11H1, 11H2	1st ([a])	2nd	3rd	—	—	4th	—	—	—
21H1, 21H2, 31H1, 31H2	1st ([a])	2nd	3rd	4th	5th	6th	—	—	—
Composite:									
11HZ1, 11HZ2	1st ([a])	2nd	3rd	—	—	4th ([e])	—	—	—
21HZ1, 21HZ2, 31HZ1, 31HZ2	1st ([a])	2nd	3rd	4th	5th	6th ([e])	—	—	—
Fibreboard	1st	—	2nd	—	—	3rd	—	—	—
Wooden	1st	—	2nd	—	—	3rd	—	—	—

([a]) When IBCs are designed for this method of handling.
([b]) When IBCs are designed to be stacked.
([c]) When IBCs are designed to be lifted from the top or the side.
([d]) Required test indicated by x; an IBC which has passed one test may be used for other tests, in any order.
([e]) Another IBC of the same design may be used for the drop test.

6.5.4.4. Bottom lift test

6.5.4.4.1. Applicability

For all fibreboard and wooden IBCs, and for all types of IBC which are fitted with means of lifting from the base, as a design type test.

6.5.4.4.2. Preparation of IBCs for test

The IBC shall be loaded to 1,25 times its maximum permissible gross mass, the load being evenly distributed.

6.5.4.4.3. Method of testing

The IBC shall be raised and lowered twice by a lift truck with the forks centrally positioned and spaced at three quarters of the dimension of the side of entry (unless the points of entry are fixed). The forks shall penetrate to three quarters of the direction of entry. The test shall be repeated from each possible direction of entry.

6.5.4.4.4. Criteria for passing the test

No permanent deformation which renders the IBC, including the base pallet, if any, unsafe for carriage and no loss of contents.

6.5.4.5. Top lift test

6.5.4.5.1. Applicability

For all types of IBC which are designed to be lifted from the top and for flexible IBCs designed to be lifted from the top or the side, as a design type test.

6.5.4.5.2. Preparation of IBCs for test

Metal, rigid plastics and composite IBCs shall be loaded to twice their maximum permissible gross mass. Flexible IBCs shall be filled to six times their maximum permissible load, the load being evenly distributed.

6.5.4.5.3. Methods of testing

Metal and flexible IBCs shall be lifted in the manner for which they are designed until clear of the floor and maintained in that position for a period of five minutes.

Rigid plastics and composite IBCs shall be lifted:

(a) by each pair of diagonally opposite lifting devices, so that the hoisting forces are applied vertically, for a period of five minutes; and

(b) by each pair of diagonally opposite lifting devices, so that the hoisting forces are applied toward the centre at 45° to the vertical, for a period of five minutes.

6.5.4.5.4. Other methods of top lift testing and preparation at least equally effective may be used for flexible IBCs.

6.5.4.5.5. Criteria for passing the test

(a) Metal, rigid plastics and composite IBCs: no permanent deformation which renders the IBC, including the base pallet, if any, unsafe for carriage and no loss of contents.

(b) Flexible IBCs: no damage to the IBC or its lifting devices which renders the IBC unsafe for carriage or handling.

6.5.4.6. Stacking test

6.5.4.6.1. Applicability

For all types of IBC which are designed to be stacked on each other, as a design type test.

6.5.4.6.2. Preparation of IBCs for test

IBCs, other than flexible IBCs, shall be loaded to their maximum permissible gross mass. Flexible IBCs shall be filled to not less than 95 % of their capacity and to their maximum permissible load, the load being evenly distributed.

6.5.4.6.3. Method of testing

(a) The IBC shall be placed on its base on level hard ground and subjected to a uniformly distributed superimposed test load (see 6.5.4.6.4). IBCs shall be subjected to the test load for a period of at least:

(i) 5 minutes, for metal IBCs;

(ii) 28 days at 40 C, for rigid plastics IBCs of types 11H2, 21H2 and 31H2 and for composite IBCs with outer casings of plastics material which bear the stacking load (i.e., types 11HH1, 11HH2, 21HH2, 31HH1 and 31HH2);

(iii) 24 hours, for all other types of IBCs;

(b) The load shall be applied by one of the following methods:

(i) one or more IBCs of the same type filled to the maximum permissible gross mass and, in the case of flexible IBCs, the maximum permissible load and stacked on the test IBC;

(ii) appropriate weights loaded on to either a flat plate or a reproduction of the base of the IBC, which is stacked on the test IBC.

6.5.4.6.4. Calculation of superimposed test load

The load to be placed on the IBC shall be 1,8 times the combined maximum permissible gross mass of the number of similar IBCs that may be stacked on top of the IBC during carriage.

6.5.4.6.5. Criteria for passing the test

(a) All types of IBC other than flexible IBCs: no permanent deformation which renders the IBC including the base pallet, if any, unsafe for carriage and no loss of contents.

(b) Flexible IBCs: no deterioration of the body which renders the IBC unsafe for carriage and no loss of contents.

6.5.4.7. Leakproofness test

6.5.4.7.1. Applicability

For those types of IBC used for liquids or for solids loaded or discharged under pressure, as a design type test and periodic test.

6.5.4.7.2. Preparation of IBCs for test

The test shall be carried out before the fitting of any thermal insulation equipment. Vented closures shall either be replaced by similar non-vented closures or the vent shall be sealed.

6.5.4.7.3. Method of testing and pressure to be applied

The test shall be carried out for a period of at least 10 minutes using air at a gauge pressure of not less than 20 kPa (0,2 bar). The air tightness of the IBC shall be determined by a suitable method such as by air-pressure differential test or by immersing the IBC in water or, for metal IBCs, by coating the seams and joints with a soap solution. In the case of immersing a correction factor shall be applied for the hydrostatic pressure. Other methods at least equally effective may be used.

6.5.4.7.4. Criterion for passing the test

No leakage of air.

6.5.4.8. Internal pressure (hydraulic) test

6.5.4.8.1. Applicability

For those types of IBCs used for liquids or for solids loaded or discharged under pressure, as a design type test.

6.5.4.8.2. Preparation of IBCs for test

The test shall be carried out before the fitting of any thermal insulation equipment. Pressure-relief devices shall be removed and their apertures plugged, or shall be rendered inoperative.

6.5.4.8.3. Method of testing

The test shall be carried out for a period of at least 10 minutes applying a hydraulic pressure not less than that indicated in 6.5.4.8.4. The IBCs shall not be mechanically restrained during the test.

6.5.4.8.4. Pressures to be applied

6.5.4.8.4.1. Metal IBCs:

(a) For IBCs of types 21A, 21B and 21N, for Packing Group I solids, a 250 kPa (2,5 bar) gauge pressure;

(b) For IBCs of types 21A, 21B, 21N, 31A, 31B and 31N, for Packing Group II or III substances, a 200 kPa (2 bar) gauge pressure;

(c) In addition, for IBCs of types 31A, 31B and 31N, a 65 kPa (0,65 bar) gauge pressure. This test shall be performed before the 200 kPa (2 bar) test.

6.5.4.8.4.2. Rigid plastics and composite IBCs:

(a) For IBCs of types 21H1, 2lH2, 21HZ1 and 21HZ2: 75 kPa (0.75 bar) (gauge);

(b) For IBCs of types 31H1, 31H2, 31HZ1 and 31HZ2: whichever is the greater of two values, the first as determined by one of the following methods:

(i) the total gauge pressure measured in the IBC (i.e. the vapour pressure of the filling substance and the partial pressure of the air or other inert gases, minus 100 kPa) at 55 °C multiplied by a safety factor of 1,5; this total gauge pressure shall be determined on the basis of a maximum degree of filling in accordance with 4.1.1.4 and a filling temperature of 15 °C;

(ii) 1,75 times the vapour pressure at 50 °C of the substance to be carried minus 100 kPa, but with a minimum test pressure of 100 kPa;

(iii) 1,5 times the vapour pressure at 55 °C of the substance to be carried minus 100 kPa, but with a minimum test pressure of 100 kPa;

and the second as determined by the following method:

(iv) twice the static pressure of the substance to be carried, with a minimum of twice the static pressure of water;

6.5.4.8.5. Criteria for passing the test(s):

(a) For IBCs of types 21A, 21B, 21N, 31A, 31B and 31N, when subjected to the test pressure specified in 6.5.4.8.4.1 (a) or (b): no leakage;

(b) For IBCs of types 31A, 31B and 31N, when subjected to the test pressure specified in 6.5.4.8.4.1(c): no permanent deformation which renders the IBC unsafe for carriage and no leakage;

(c) For rigid plastics and composite IBCs: no permanent deformation which would render the IBC unsafe for carriage and no leakage.

6.5.4.9. Drop test

6.5.4.9.1. Applicability

For all types of IBCs, as a design type test.

6.5.4.9.2. Preparation of IBCs for test

(a) Metal IBCs: the IBC shall be filled to not less than 95 % of its capacity for solids or 98 % for liquids in accordance with the design type. Pressure-relief devices shall be removed and their apertures plugged, or shall be rendered inoperative;

(b) Flexible IBCs: the IBC shall be filled to not less than 95 % of its capacity and to its maximum permissible load, the load being evenly distributed;

(c) Rigid plastics and composite IBCs: the IBC shall be filled to not less than 95 % of its capacity for solids or 98 % for liquids in accordance with the design type. Arrangements provided for pressure relief may be removed and plugged or rendered inoperative. Testing of IBCs shall be carried out when the temperature of the test sample and its contents has been reduced to minus 18 °C or lower. Where test samples of composite IBCs are prepared in this way the conditioning specified in 6.5.4.3.1 may be waived. Test liquids shall be kept in the liquid state, if necessary by the addition of anti-freeze. This conditioning may be disregarded if the materials in question are of sufficient ductility and tensile strength at low temperatures;

(d) Fibreboard and wooden IBCs: The IBC shall be filled to not less than 95 % of its capacity in accordance with the design type.

6.5.4.9.3. Method of testing

The IBC shall be dropped on its base onto a rigid, non-resilient, smooth, flat and horizontal surface in such a manner as to ensure that the point of impact is that part of the base of the IBC considered to be the most vulnerable. IBCs of 0,45 m^3 or less capacity shall also be dropped:

(a) Metal IBCs: on the most vulnerable part other than the part of the base tested in the first drop;

(b) Flexible IBCs: on the most vulnerable side;

(c) Rigid plastics, composite, fibreboard and wooden IBCs: flat on a side, flat on the top and on a corner.

The same or different IBCs may be used for each drop.

6.5.4.9.4. Drop height

Packing Group I	Packing Group II	Packing Group III
1,8 m	1,2 m	0,8 m

6.5.4.9.5. Criteria for passing the test(s):

(a) Metal IBCs: no loss of contents;

(b) Flexible IBCs: no loss of contents. A slight discharge, e.g. from closures or stitch holes, upon impact shall not be considered to be a failure of the IBC provided that no further leakage occurs after the IBC has been raised clear of the ground;

(c) Rigid plastics, composite, fibreboard and wooden IBCs: no loss of contents. A slight discharge from a closure upon impact shall not be considered to be a failure of the IBC provided that no further leakage occurs.

6.5.4.10. Tear test

6.5.4.10.1. Applicability

For all types of flexible IBCs, as a design type test.

6.5.4.10.2. Preparation of IBCs for test

The IBC shall be filled to not less than 95 % of its capacity and to its maximum permissible load, the load being evenly distributed.

6.5.4.10.3. Method of testing

Once the IBC is placed on the ground, a 100 mm knife score, completely penetrating the wall of a wide face, is made at a 45° angle to the principal axis of the IBC, halfway between the bottom surface and the top level of the contents. The IBC shall then be subjected to a uniformly distributed superimposed load equivalent to twice the maximum permissible load. The load shall be applied for at least five minutes. An IBC which is designed to be lifted from the top or the side shall then, after removal of the superimposed load, be lifted clear of the floor and maintained in that position for a period of five minutes.

6.5.4.10.4. Criteria for passing the test

The cut shall not propagate more than 25 % of its original length.

6.5.4.11. Topple test

6.5.4.11.1. Applicability

For all types of flexible IBC, as a design type test.

6.5.4.11.2. Preparation of IBCs for test

The IBC shall be filled to not less than 95 % of its capacity and to its maximum permissible load, the load being evenly distributed.

6.5.4.11.3. Method of testing

The IBC shall be caused to topple on to any part of its top on to a rigid, non-resilient, smooth, flat and horizontal surface.

6.5.4.11.4. Topple height

Packing Group I	Packing Group II	Packing Group III
1,8 m	1,2 m	0,8 m

6.5.4.11.5. Criteria for passing the test

No loss of contents. A slight discharge, e.g. from closures or stitch holes, upon impact shall not be considered to be a failure of the IBC provided that no further leakage occurs.

6.5.4.12. Righting test

6.5.4.12.1. Applicability

For all flexible IBCs designed to be lifted from the top or side, as a design type test.

6.5.4.12.2. Preparation of IBCs for test

The IBC shall be filled to not less than 95 % of its capacity and to its maximum permissible load, the load being evenly distributed.

6.5.4.12.3. Method of testing

The IBC, lying on its side, shall be lifted at a speed of at least 0,1 m/s to upright position, clear of the floor, by one lifting device or by two lifting devices when four are provided.

6.5.4.12.4. Criteria for passing the test

No damage to the IBC or its lifting devices which renders the IBC unsafe for carriage or handling.

6.5.4.13. Test report

6.5.4.13.1. A test report containing at least the following particulars shall be drawn up and shall be made available to the users of the IBC:

1. Name and address of the test facility;
2. Name and address of applicant (where appropriate);
3. A unique test report identification;
4. Date of the test report;
5. Manufacturer of the IBC;
6. Description of the IBC design type (e.g. dimensions, materials, closures, thickness, etc.) including method of manufacture (e.g. blow moulding) and which may include drawing(s) and/or photograph(s);
7. Maximum capacity;
8. Characteristics of test contents, e.g. viscosity and relative density for liquids and particle size for solids;
9. Test descriptions and results;
10. The test report shall be signed with the name and status of the signatory.

6.5.4.13.2. The test report shall contain statements that the IBC prepared as for carriage was tested in accordance with the appropriate requirements of this Chapter and that the use of other packaging methods or components may render it invalid. A copy of the test report shall be available to the competent authority.

6.5.4.14. Initial and periodic testing of individual metal, rigid plastics and composite IBCs

6.5.4.14.1. These tests shall be carried out as required by the competent authority.

6.5.4.14.2. Each IBC shall correspond in all respects to its design type.

6.5.4.14.3. Each metal, rigid plastics and composite IBC for liquids, or for solids which are loaded or discharged under pressure, shall be subjected to the leakproofness test, as an initial test (i.e., before the IBC is first used for carriage) and at intervals of not more than two and a half years.

6.5.4.14.4. This leakproofness test shall also be repeated after any repair, before it is reused for carriage.

6.5.4.14.5. The results of tests shall be recorded in test reports to be kept by the owner of the IBC.

CHAPTER 6.6

Requirements for the construction and testing of large packagings

6.6.1. *General*

6.6.1.1. The requirements of this Chapter do not apply to:

— packagings for Class 2, except large packagings for articles of Class 2, including aerosols;

— packagings for Class 6.2, except large packagings for clinical waste of UN 3291;

— Class 7 packages containing radioactive material.

6.6.1.2. Large packagings shall be manufactured and tested under a quality assurance programme which satisfies the competent authority in order to ensure that each manufactured packaging meets the requirements of this Chapter.

6.6.2. *Code for designating types of large packagings*

The code used for large packagings consists of:

(a) Two Arabic numerals:

50 for rigid large packagings;

51 for flexible large packagings; and

(b) A capital letter in Latin character indicating the nature of the material, e.g. wood, steel etc. The capital letters used shall be those shown in 6.1.2.6.

6.6.3. *Marking*

6.6.3.1. Primary marking. Each large packaging manufactured and intended for use in accordance with the provisions of this Directive shall bear durable and legible markings showing:

(a) The United Nations packaging symbol

For metal large packagings on which the marking is stamped or embossed, the capital letters 'UN' may be applied instead of the symbol;

(b) The number '50' designating a rigid large packaging or '51' for a flexible large packaging, followed by the material type in accordance with 6.5.1.4.1(b);

(c) A capital letter designating the packing group(s) for which the design type has been approved:

X for packing groups I, II and III

Y for packing groups II and III

Z for packing group III only;

(d) The month and year (last two digits) of manufacture;

(e) The State authorising the allocation of the mark; indicated by the distinguishing sign for motor vehicles in international traffic ([1]);

(f) The name or symbol of the manufacturer and other identification of the large packagings as specified by the competent authority;

([1]) Distinguishing sign for motor vehicles in international traffic prescribed in the Vienna Convention on Road Traffic (1968).

(g) The stacking test load in kg. For large packagings not designed for stacking the figure '0' shall be shown;

(h) The maximum permissible gross mass in kilograms.

The primary marking required above shall be applied in the sequence of the subparagraphs.

6.6.3.2. Examples of the marking

u n	50 A/X/05 96/N/PQRS 2500/1000	For a large steel packaging suitable for stacking; stacking load: 2 500 kg; maximum permissible gross mass: 1 000 kg.
u n	50 H/Y04 95/D/ABCD 987 0/800	For a large plastics packaging not suitable for stacking; maximum permissible gross mass: 800 kg.
u n	51H/Z/0697/S/1999 0/500	For a large flexible packaging not suitable for stacking; maximum permissible gross mass: 500 kg.

6.6.4. *Specific requirements for large packagings*

6.6.4.1. Specific requirements for metal large packagings

50A steel

50B aluminium

50N metal (other than steel or aluminium)

6.6.4.1.1. The large packaging shall be made of suitable ductile metal in which the weldability has been fully demonstrated. Welds shall be skillfully made and afford complete safety. Low-temperature performance shall be taken into account when appropriate.

6.6.4.1.2. Care shall be taken to avoid damage by galvanic action due to the juxtaposition of dissimilar metals.

6.6.4.2. Specific requirements for flexible material large packagings

51H flexible plastics

51M paper

6.6.4.2.1. The large packaging shall be manufactured from suitable materials. The strength of the material and the construction of the flexible large packagings shall be appropriate to its capacity and its intended use.

6.6.4.2.2. All materials used in the construction of flexible large packagings of type 51M shall, after complete immersion in water for not less than 24 hours, retain at least 85 % of the tensile strength as measured originally on the material conditioned to equilibrium at 67 % relative humidity or less.

6.6.4.2.3. Seams shall be formed by stitching, heat sealing, gluing or any equivalent method. All stitched seam-ends shall be secured.

6.6.4.2.4. Flexible large packagings shall provide adequate resistance to ageing and to degradation caused by ultraviolet radiation or the climatic conditions, or by the substance contained, thereby rendering them appropriate to their intended use.

6.6.4.2.5. For plastics flexible large packagings where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the large packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.6.4.2.6. Additives may be incorporated into the material of the large packaging to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.6.4.2.7. When filled, the ratio of height to width shall be not more than 2:1.

6.6.4.3. Specific requirements for rigid plastics large packagings

50H rigid plastics

6.6.4.3.1. The large packaging shall be manufactured from suitable plastics material of known specifications and be of adequate strength in relation to its capacity and its intended use. The material shall be adequately resistant to ageing and to degradation caused by the substance contained or, where relevant, by ultraviolet radiation. Low temperature performance shall be taken into account when appropriate. Any permeation of the substance contained shall not constitute a danger under normal conditions of transport.

6.6.4.3.2. Where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the outer packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.6.4.3.3. Additives may be incorporated in the material of the large packaging to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.6.4.4. Specific requirements for fibreboard large packagings

50G rigid fibreboard

6.6.4.4.1. Strong and good quality solid or double-faced corrugated fibreboard (single or multiwall) shall be used, appropriate to the capacity of the large packagings and to their intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over a period of 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m^2 — see ISO 535:1991. It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting of corrugated fibreboard shall be firmly glued to the facings.

6.6.4.4.2. The walls, including top and bottom, shall have a minimum puncture resistance of 15 J measured according to ISO 3036:1975.

6.6.4.4.3. Manufacturing joins in the outer packaging of large packagings shall be made with an appropriate overlap and shall be taped, glued, stitched with metal staples or fastened by other means at least equally effective. Where joins are effected by gluing or taping, a water resistant adhesive shall be used. Metal staples shall pass completely through all pieces to be fastened and be formed or protected so that any inner liner cannot be abraded or punctured by them.

6.6.4.4.4. Any integral pallet base forming part of a large packaging or any detachable pallet shall be suitable for mechanical handling with the large packaging filled to its maximum permissible gross mass.

6.6.4.4.5. The pallet or integral base shall be designed so as to avoid any protrusion of the base of the large packaging that might be liable to damage in handling.

6.6.4.4.6. The body shall be secured to any detachable pallet to ensure stability in handling and transport. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the large packaging.

6.6.4.4.7. Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.6.4.4.8. Where large packagings are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.6.4.5. Specific requirements for wooden large packagings

50C natural wood

50D plywood

50F reconstituted wood

6.6.4.5.1. The strength of the materials used and the method of construction shall be appropriate to the capacity and intended use of the large packagings.

6.6.4.5.2. Natural wood shall be well seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the large packagings. Each part of the large packagings shall consist of one piece or be equivalent thereto. Parts are considered equivalent to one piece when a suitable method of glued assembly is used as for instance Lindermann joint, tongue and groove joint, ship lap or rabbet joint; or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used.

6.6.4.5.3. Large packagings of plywood shall be at least 3-ply. They shall be made of well seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the large packaging. All adjacent plies shall be glued with water resistant adhesive. Other suitable materials may be used with plywood for the construction of the large packaging.

6.6.4.5.4. Large packagings of reconstituted wood shall be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type.

6.6.4.5.5. Large packagings shall be firmly nailed or secured to corner posts or ends or be assembled by equally suitable devices.

6.6.4.5.6. Any integral pallet base forming part of a large packaging or any detachable pallet shall be suitable for mechanical handling with the large packaging filled to its maximum permissible gross mass.

6.6.4.5.7. The pallet or integral base shall be designed so as to avoid any protrusion of the base of the large packaging that might be liable to damage in handling.

6.6.4.5.8. The body shall be secured to any detachable pallet to ensure stability in handling and transport. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the large packaging.

6.6.4.5.9. Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.6.4.5.10. Where large packagings are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.6.5. *Test requirements*

6.6.5.1. Performance and frequency of tests

6.6.5.1.1. The design type of each large packaging shall be tested as provided in 6.6.5.3 in accordance with procedures established and approved by the competent authority.

6.6.5.1.2. Tests shall be successfully performed on each large packaging design type before such a packaging is used. A large packaging design type is defined by the design, size, material and thickness, manner of construction and packing, but may include various surface treatments. It also includes large packagings which differ from the design type only in their lesser design height.

6.6.5.1.3. Tests shall be repeated on production samples at intervals established by the competent authority. For such tests on fibreboard or paper large packagings, preparation at ambient conditions is considered equivalent to the provisions of 6.6.5.2.3.

6.6.5.1.4. Tests shall also be repeated after each modification which alters the design, material or manner of construction of large packagings.

6.6.5.1.5. The competent authority may permit the selective testing of large packagings that differ only in minor respects from a tested type, e.g. smaller sizes of inner packagings or inner packagings of lower net mass; and large packagings, such as drums, bags and boxes which are produced with small reductions in external dimension(s).

6.6.5.1.6. Where a large packaging has been successfully tested with different types of inner packagings, a variety of such different inner packagings may also be assembled in this large packaging. In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:

(a) Inner packagings of equivalent or smaller size may be used provided:

(i) The inner packagings are of similar design to the tested inner packagings (e.g. shape-round, rectangular, etc);

(ii) The material of construction of the inner packagings (glass, plastics, metal etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;

(iii) The inner packagings have the same or smaller openings and the closure is of similar design (e.g. screw cap, friction lid, etc);

(iv) Sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings;

(v) Inner packagings are oriented within the outer packagings in the same manner as in the tested package;

(b) A lesser number of the tested inner packagings, or of the alternative types of inner packagings identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings.

6.6.5.1.7. The competent authority may at any time require proof, by tests in accordance with this section, that serially-produced large packagings meet the requirements of the design type tests.

6.6.5.1.8. Provided the validity of the test results is not affected and with the approval of the competent authority, several tests may be made on one sample.

6.6.5.2. Preparation for testing

6.6.5.2.1. Tests shall be carried out on large packagings prepared as for transport including the inner packagings or articles used. Inner packagings shall be filled to not less than 98 % of their maximum capacity for liquids or 95 % for solids. For large packagings where the inner packagings are designed to carry liquids and solids, separate testing is required for both liquid and solid contents. The substances in the inner packagings or the articles to be carried in the large packagings may be replaced by other material or articles except where this would invalidate the results of the tests. When other inner packagings or articles are used they shall have the same physical characteristics (mass, grain size, etc) as the inner packagings or articles to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass, so long as they are placed so that the test results are not affected.

6.6.5.2.2. Large packagings made of plastics materials and large packagings containing inner packagings of plastics materials — other than bags intended to contain solids or articles - shall be drop tested when the temperature of the test sample and its contents has been reduced to – 18 °C or lower. This conditioning may be disregarded if the materials in question are of sufficient ductility and tensile strength at low temperatures. Where test samples are prepared in this way, the conditioning in 6.6.5.2.3 may be waived. Test liquids shall be kept in the liquid state by the addition of anti-freeze if necessary.

6.6.5.2.3. Large packagings of fibreboard shall be conditioned for at least 24 hours in an atmosphere having a controlled temperature and relative humidity (r.h). There are three options, one of which shall be chosen.

The preferred atmosphere is 23 °C ± 2 °C and 50 % ± 2 % r.h. The two other options are: 20 °C ± 2 °C and 65 % ± 2 % r.h; or 27 °C ± 2 °C and 65 % ± 2 % r.h.

NOTE: Average values shall fall within these limits. Short term fluctuations and measurement limitations may cause individual measurements to vary by up to ± 5 % relative humidity without significant impairment of test reproducibility.

6.6.5.3. Test requirements

6.6.5.3.1. Bottom lift test

6.6.5.3.1.1. Applicability

For all types of large packagings which are fitted with means of lifting from the base, as a design type test.

6.6.5.3.1.2. Preparation of large packagings for test

The large packagings shall be loaded to 1,25 times its maximum permissible gross mass, the load being evenly distributed.

6.6.5.3.1.3. Method of testing

The large packagings shall be raised and lowered twice by a lift truck with the forks centrally positioned and spaced at three quarters of the dimension of the side of entry (unless the points of entry are fixed). The forks shall penetrate to three quarters of the direction of entry. The test shall be repeated from each possible direction of entry.

6.6.5.3.1.4. Criteria for passing the test

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.2. Top lift test

6.6.5.3.2.1. Applicability

For all types of large packagings which are designed to be lifted from the top, as a design type test.

6.6.5.3.2.2. Preparation of large packagings for test

The large packaging shall be loaded to twice its maximum permissible gross mass.

6.6.5.3.2.3. Method of testing

The large packaging shall be lifted in the manner for which it is designed until clear of the floor and maintained in that position for a period of five minutes.

6.6.5.3.2.4. Criteria for passing the test

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.3. Stacking test

6.6.5.3.3.1. Applicability

For all types of large packagings which are designed to be stacked on each other, as a design type test.

6.6.5.3.3.2. Preparation of large packagings for test

The large packaging shall be filled to its maximum permissible gross mass.

6.6.5.3.3.3. Method of testing

The large packagings shall be placed on its base on level hard ground and subjected to a uniformly distributed superimposed test load (see 6.6.5.3.3.4) for a period of at least five minutes, large packagings of wood, fibreboard and plastics materials for a period of at least 24 h.

6.6.5.3.3.4. Calculation of superimposed test load

The load to be placed on the large packagings shall be at least 1,8 times the combined maximum permissible gross mass of the number of similar large packagings that must be stacked on top of the large packagings during transport.

6.6.5.3.3.5. Criteria for passing the test

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.4. Drop test

6.6.5.3.4.1. Applicability

For all types of large packagings as a design type test.

6.6.5.3.4.2. Preparation of large packagings for testing

The large packagings shall be filled in accordance with 6.6.5.2.1

6.6.5.3.4.3. Method of testing

The large packagings shall be dropped onto a rigid, non-resilient, smooth, flat and horizontal surface, in such a manner as to ensure that the point of impact is that part of the base of the large packagings considered to be the most vulnerable.

6.6.5.3.4.4. Drop height

Packing Group I	Packing Group II	Packing Group III
1,8 m	1,2 m	0,8 m

NOTE: Large packagings for substances and articles of Class 1, self-reactive substances of Class 4.1 and organic peroxides of Class 5.2 shall be tested at the packing group II performance level.

6.6.5.3.4.5. Criteria for passing the test

6.6.5.3.4.5.1. The large packagings shall not exhibit any damage liable to affect safety during transport. There shall be no leakage of the filling substance from inner packaging(s) or article(s).

6.6.5.3.4.5.2. No rupture is permitted in large packagings for articles of Class 1 which would permit the spillage of loose explosive substances or articles from the large packagings.

6.6.5.3.4.5.3. Where a large packaging undergoes a drop test the sample passes the test if the entire contents are retained even if the closure is no longer sift-proof.

6.6.5.4. Certification and test report

6.6.5.4.1. In respect of each design type of large packagings a certificate and mark (as in 6.6.3) shall be issued attesting that the design type including its equipment meets the test requirements.

6.6.5.4.2. A test report containing at least the following particulars shall be drawn up and shall be made available to the users of the large packagings:

1. Name and address of the test facility;
2. Name and address of applicant (where appropriate);
3. A unique test report identification;
4. Date of the test report;
5. Manufacturer of the large packagings;
6. Description of the large packagings design type (e.g. dimensions, materials, closures, thickness, etc) and/or photograph(s);
7. Maximum capacity/maximum permissible gross mass;
8. Characteristics of test contents, e.g. types and descriptions of inner packagings or articles used;
9. Test descriptions and results;
10. The test report shall be signed with the name and status of the signatory.

6.6.5.4.3. The test report shall contain statements that the large packaging prepared as for transport was tested in accordance with the appropriate provisions of this Chapter and that the use of other packaging methods or components may render it invalid. A copy of the test report shall be available to the competent authority.

CHAPTER 6.7

Requirements for the design, construction and testing of portable tanks

NOTE: For tank wagons, wagons with demountable tanks, tank-containers and tank swap bodies with shells made of metallic materials, and battery wagons and multiple element gas containers (MEGCs), see Chapter 6.8; for tank-containers made of fibre-reinforced plastics, see Chapter 6.9.

6.7.1. *Application and general requirements*

6.7.1.1. The requirements of this Chapter apply to portable tanks intended for the carriage of goods of classes 2, 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 7, 8 and 9, by all modes of transport. In addition to the requirements of this Chapter, unless otherwise specified, the applicable requirements of the International Convention for Safe Containers (CSC) 1972, as amended, shall be fulfilled by any portable tank which meets the definition of a 'container' within the terms of that Convention. Additional requirements may apply to offshore portable tanks that are handled in open seas.

6.7.1.2. In recognition of scientific and technological advances, the technical requirements of this Chapter may be varied by alternative arrangements. These alternative arrangements shall offer a level of safety not less than that given by the requirements of this Chapter with respect to the compatibility with substances carried and the ability of the portable tank to withstand impact, loading and fire conditions. For international transport, alternative arrangement portable tanks shall be approved by the applicable competent authorities.

6.7.1.3. When a substance is not assigned a portable tank instruction (T1 to T23, T50 or T75) in Column (10) of Table A of Chapter 3.2, interim approval for transport may be issued by the competent authority of the country of origin. The approval shall be included in the documentation of the consignment and contain as a minimum the information normally provided in the portable tank instructions and the conditions under which the substance shall be carried.

6.7.2. *Requirements for the design, construction and testing of portable tanks intended for the carriage of substances of Classes 3 to 9*

6.7.2.1. Definitions

For the purposes of this section:

Portable tank means a multimodal tank having a capacity of more than 450 litres used for the carriage of substances of Classes 3 to 9. The portable tank includes a shell fitted with service equipment and structural equipment necessary for the carriage of these substances. The portable tank shall be capable of being filled and discharged without the removal of its structural equipment. It shall possess stabilizing members external to the shell, and shall be capable of being lifted when full. It shall be designed primarily to be lifted onto a transport vehicle or ship and shall be equipped with skids, mountings or accessories to facilitate mechanical handling. Road tank-vehicles, rail tank-wagons, non-metallic tanks and intermediate bulk containers (IBCs) are not considered to fall within the definition for portable tanks;

Shell means the part of the portable tank which retains the substance intended for transport (tank proper), including openings and their closures, but does not include service equipment or external structural equipment;

Service equipment means measuring instruments and filling, discharge, venting, safety, heating, cooling and insulating devices;

Structural equipment means the reinforcing, fastening, protective and stabilizing members external to the shell;

Maximum allowable working pressure (MAWP) means a pressure that shall be not less than the highest of the following pressures measured at the top of the shell while in operating position:

(a) The maximum permissible gauge pressure allowed in the shell during filling or discharge;

(b) The maximum effective gauge pressure to which the shell is designed which shall be not less than the sum of:

(i) the absolute vapour pressure (in bar) of the substance at 65 °C, minus 1 bar; and

(ii) the partial pressure (in bar) of air or other gases in the ullage space being determined by a maximum ullage temperature of 65 °C and a liquid expansion due to an increase in mean bulk temperature of t_r—t_f (t_f = filling temperature, usually 15 °C; t_r= 50 °C, maximum mean bulk temperature);

Design pressure means the pressure to be used in calculations required by a recognized pressure vessel code. The design pressure shall be not less than the highest of the following pressures:

(a) The maximum effective gauge pressure allowed in the shell during filling or discharge;

(b) The sum of:

(i) the absolute vapour pressure (in bar) of the substance at 65 °C, minus 1 bar;

(ii) the partial pressure (in bar) of air or other gases in the ullage space being determined by a maximum ullage temperature of 65 °C and a liquid expansion due to an increase in mean bulk temperature of t_r—t_f (t_f = filling temperature usually 15 °C; t_r= 50 °C, maximum mean bulk temperature); and

(iii) a fluid pressure determined on the basis of the dynamic forces specified in 6.7.2.2.12, but not less than 0.35 bar or

(c) Two thirds of the minimum test pressure specified in the applicable portable tank instruction in 4.2.4.2.6;

Test pressure means the maximum gauge pressure at the top of the shell during the hydraulic pressure test equal to not less than 1,5 times the design pressure. The minimum test pressure for portable tanks intended for specific substances is specified in the applicable portable tank instruction in 4.2.4.2.6;

Leakproofness test means a test using gas subjecting the shell and its service equipment to an effective internal pressure of not less than 25 % of the MAWP;

Maximum permissible gross mass (MPGM) means the sum of the tare mass of the portable tank and the heaviest load authorized for transport;

Reference steel means a steel with a tensile strength of 370 N/mm^2 and an elongation at fracture of 27 %;

Mild steel means a steel with a guaranteed minimum tensile strength of 360 N/mm^2 to 440 N/mm^2 and a guaranteed minimum elongation at fracture conforming to 6.7.2.3.3.3;

Design temperature range for the shell shall be – 40 °C to 50 °C for substances carried under ambient conditions. For substances handled under elevated temperature conditions the design temperature shall be not less than the maximum temperature of the substance during filling, discharge or carriage. More severe design temperatures shall be considered for portable tanks subjected to severe climatic conditions.

6.7.2.2. General design and construction requirements

6.7.2.2.1. Shells shall be designed and constructed in accordance with the requirements of a pressure vessel code recognized by the competent authority. Shells shall be made of metallic materials suitable for forming. The materials shall in principle conform to national or international material standards. For welded shells only a material whose weldability has been fully demonstrated shall be used. Welds shall be skilfully made and afford complete safety. When the manufacturing process or the materials make it necessary, the shells shall be suitably heat-treated to guarantee adequate toughness in the weld and in the heat affected zones. In choosing the material, the design temperature range shall be taken into account with respect to risk of brittle fracture, to stress corrosion cracking and to resistance to impact. When fine grain steel is used, the guaranteed value of the yield strength shall be not more than 460 N/mm^2 and the guaranteed value of the upper limit of the tensile strength shall be not more than 725 N/mm^2 according to the material specification. Aluminium may only be used as a construction material when indicated in a portable tank special provision assigned to a specific substance in Column (11) of table A of Chapter 3.2 or when approved by the competent authority. When aluminium is authorized, it shall be insulated to prevent significant loss of physical properties when subjected to a heat load of 110 kW/m^2 for a period of not less than 30 minutes. The insulation shall remain effective at all temperatures less than 649 °C and shall be jacketed with a material with a melting point of not less than 700 °C. Portable tank materials shall be suitable for the external environment in which they may be carried.

6.7.2.2.2. Portable tank shells, fittings, and pipework shall be constructed from materials which are:

(a) Substantially immune to attack by the substance(s) intended to be carried; or

(b) Properly passivated or neutralized by chemical reaction; or

(c) Lined with corrosion-resistant material directly bonded to the shell or attached by equivalent means.

6.7.2.2.3. Gaskets shall be made of materials not subject to attack by the substance(s) intended to be carried.

6.7.2.2.4. When shells are lined, the lining shall be substantially immune to attack by the substance(s) intended to be carried, homogeneous, non porous, free from perforations, sufficiently elastic and compatible with the thermal expansion characteristics of the shell. The lining of every shell, shell fittings and piping shall be continuous, and shall extend around the face of any flange. Where external fittings are welded to the tank, the lining shall be continuous through the fitting and around the face of external flanges.

6.7.2.2.5. Joints and seams in the lining shall be made by fusing the material together or by other equally effective means.

6.7.2.2.6. Contact between dissimilar metals which could result in damage by galvanic action shall be avoided.

6.7.2.2.7. The materials of the portable tank, including any devices, gaskets, linings and accessories, shall not adversely affect the substance(s) intended to be carried in the portable tank.

6.7.2.2.8. Portable tanks shall be designed and constructed with supports to provide a secure base during transport and with suitable lifting and tie-down attachments.

6.7.2.2.9. Portable tanks shall be designed to withstand, without loss of contents, at least the internal pressure due to the contents, and the static, dynamic and thermal loads during normal conditions of handling and transport. The design shall demonstrate that the effects of fatigue, caused by repeated application of these loads through the expected life of the portable tank, have been taken into account.

6.7.2.2.10. A shell which is to be equipped with a vacuum-relief device shall be designed to withstand, without permanent deformation, an external pressure of not less than 0,21 bar above the internal pressure. The vacuum-relief device shall be set to relieve at a vacuum setting not greater than minus (–) 0,21 bar unless the shell is designed for a higher external overpressure, in which case the vacuum-relief pressure of the device to be fitted shall be not greater than the tank design vacuum pressure. A shell that is not to be fitted with a vacuum-relief device shall be designed to withstand, without permanent deformation an external pressure of not less than 0.4 bar above the internal pressure.

6.7.2.2.11. Vacuum-relief devices used on portable tanks intended for the carriage of substances meeting the flash-point criteria of Class 3, including elevated temperature substances carried at or above their flash-point, shall prevent the immediate passage of flame into the shell, or the portable tank shall have a shell capable of withstanding, without leakage, an internal explosion resulting from the passage of flame into the shell.

6.7.2.2.12. Portable tanks and their fastenings shall, under the maximum permissible load, be capable of absorbing the following separately applied static forces:

(a) (a) In the direction of travel: twice the MPGM multiplied by the acceleration due to gravity (g) ([1]);

(b) Horizontally at right angles to the direction of travel: the MPGM (when the direction of travel is not clearly determined, the forces shall be equal to twice the MPGM) multiplied by the acceleration due to gravity (g) ([1]);

(c) Vertically upwards: the MPGM multiplied by the acceleration due to gravity (g) ([1]); and

(d) Vertically downwards: twice the MPGM (total loading including the effect of gravity) multiplied by the acceleration due to gravity (g) ([1]).

6.7.2.2.13. Under each of the forces in 6.7.2.2.12, the safety factor to be observed shall be as follows:

(a) For metals having a clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed yield strength; or

(b) For metals with no clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed 0,2 % proof strength and, for austenitic steels, the 1 % proof strength.

6.7.2.2.14. The values of yield strength or proof strength shall be the values according to national or international material standards. When austenitic steels are used, the specified minimum values of yield strength or proof strength according to the material standards may be increased by up to 15 % when these greater values are attested in the material inspection certificate. When no material standard exists for the metal in question, the value of yield strength or proof strength used shall be approved by the competent authority.

([1]) For calculation purposes $g = 9{,}81\ m/s^2$.

6.7.2.2.15. Portable tanks shall be capable of being electrically earthed when intended for the carriage of substances meeting the flash-point criteria of Class 3 including elevated temperature substances carried at or above their flash-point. Measures shall be taken to prevent dangerous electrostatic discharge.

6.7.2.2.16. When required for certain substances by the applicable portable tank instruction in 4.2.4.2.6 or by a portable tank special provision indicated in Column (11) of table A of Chapter 3.2, portable tanks shall be provided with additional protection, which may take the form of additional shell thickness or a higher test pressure, the additional shell thickness or higher test pressure being determined in the light of the inherent risks associated with the transport of the substances concerned.

6.7.2.3. Design criteria

6.7.2.3.1. Shells shall be of a design capable of being stress-analysed mathematically or experimentally by resistance strain gauges, or by other methods approved by the competent authority.

6.7.2.3.2. Shells shall be designed and constructed to withstand a hydraulic test pressure not less than 1,5 times the design pressure. Specific requirements are laid down for certain substances in the applicable tank instruction indicated in Column (10) of table A of Chapter 3.2 and described in 4.2.4.2.6 or by a portable tank special provision indicated in Column (11) of table A of Chapter 3.2 and described in 4.2.4.3. Attention is drawn to the minimum shell thickness requirements for these tanks specified in 6.7.2.4.1 to 6.7.2.4.10.

6.7.2.3.3. For metals exhibiting a clearly defined yield point or characterized by a guaranteed proof strength (0,2 % proof strength, generally, or 1 % proof strength for austenitic steels) the primary membrane stress σ (sigma) in the shell shall not exceed 0,75 Re or 0,50 Rm, whichever is lower, at the test pressure, where:

Re = yield strength in N/mm^2, or 0,2 % proof strength or, for austenitic steels, 1 % proof strength;

Rm = minimum tensile strength in N/mm^2.

6.7.2.3.3.1. The values of Re and Rm to be used shall be the specified minimum values according to national or international material standards. When austenitic steels are used, the specified minimum values for Re and Rm according to the material standards may be increased by up to 15 % when greater values are attested in the material inspection certificate. When no material standard exists for the metal in question, the values of Re and Rm used shall be approved by the competent authority or its authorized body.

6.7.2.3.3.2. Steels which have a Re/Rm ratio of more than 0,85 are not allowed for the construction of welded shells. The values of Re and Rm to be used in determining this ratio shall be the values specified in the material inspection certificate.

6.7.2.3.3.3. Steels used in the construction of shells shall have an elongation at fracture, in %, of not less than 10 000/Rm with an absolute minimum of 16 % for fine grain steels and 20 % for other steels. Aluminium and aluminium alloys used in the construction of shells shall have an elongation at fracture, in %, of not less than 10 000/6Rm with an absolute minimum of 12 %.

6.7.2.3.3.4. For the purpose of determining actual values for materials, it shall be noted that for sheet metal, the axis of the tensile test specimen shall be at right angles (transversely) to the direction of rolling. The permanent elongation at fracture shall be measured on test specimens of rectangular cross sections in accordance with ISO 6892:1998 using a 50 mm gauge length.

6.7.2.4. Minimum shell thickness

6.7.2.4.1. The minimum shell thickness shall be the greater of the following values:

(a) The minimum thickness determined in accordance with the requirements of 6.7.2.4.2 to 6.7.2.4.10;

(b) The minimum thickness determined in accordance with the recognized pressure vessel code including the requirements in 6.7.2.3; and

(c) The minimum thickness specified in the applicable portable tank instruction indicated in column (10) of table A of Chapter 3.2 and in 4.2.4.2.6 or by a portable tank special provision indicated in Column (11) of table A of Chapter 3.2 and in 4.2.4.3.

6.7.2.4.2. The cylindrical portions, ends (heads) and manhole covers of shells not more than 1,80 m in diameter shall be not less than 5 mm thick in the reference steel or of equivalent thickness in the metal to be used. Shells more than 1,80 m in diameter shall be not less than 6 mm thick in the reference steel or of equivalent thickness in the metal to be used, except that for powdered or granular solid substances of packing group II or III the minimum thickness requirement may be reduced to not less than 5 mm thick in the reference steel or of equivalent thickness in the metal to be used.

6.7.2.4.3. When additional protection against shell damage is provided, portable tanks with test pressures less than 2.65 bar may have the minimum shell thickness reduced, in proportion to the protection provided, as approved by the competent authority. However, shells not more than 1.80 m in diameter shall be not less than 3 mm thick in the reference steel or of equivalent thickness in the metal to be used. Shells more than 1.80 m in diameter shall be not less than 4 mm thick in the reference steel or of equivalent thickness in the metal to be used.

6.7.2.4.4. The cylindrical portions, ends (heads) and manhole covers of all shells shall be not less than 3 mm thick regardless of the material of construction.

6.7.2.4.5. The additional protection referred to in 6.7.2.4.3 may be provided by overall external structural protection, such as suitable 'sandwich' construction with the outer sheathing (jacket) secured to the shell, double wall construction or by enclosing the shell in a complete framework with longitudinal and transverse structural members.

6.7.2.4.6. The equivalent thickness of a metal other than the thickness prescribed for the reference steel in 6.7.2.4.2 shall be determined using the following formula:

$$e_1 = \frac{21,4 \times e_o}{\sqrt[3]{Rm_1 \times A_1}}$$

where:

e_1 = required equivalent thickness (in mm) of the metal to be used;

e_o = minimum thickness (in mm) of the reference steel specified in the applicable portable tank instruction indicated in Column (10) of table A of Chapter 3.2 and described in 4.2.4.2.6 or by a portable tank special provision indicated in Column (11) of table A of Chapter 3.2 and described in 4.2.4.3;

Rm_1 = guaranteed minimum tensile strength (in N/mm^2) of the metal to be used (see 6.7.2.3.3);

A_1 = guaranteed minimum elongation at fracture (in %) of the metal to be used according to national or international standards.

6.7.2.4.7. When in the applicable portable tank instruction in 4.2.4.2.6, a minimum thickness of 8 mm or 10 mm is specified, it shall be noted that these thicknesses are based on the properties of the reference steel and a shell diameter of 1,80 m. When a metal other than mild steel (see 6.7.2.1) is used or the shell has a diameter of more than 1,80 m, the thickness shall be determined using the following formula:

$$e_1 = \frac{21,4 e_o \, d_1}{1,8 \sqrt[3]{Rm_1 \times A_1}}$$

where:

e_1 = required equivalent thickness (in mm) of the metal to be used;

e_o = minimum thickness (in mm) of the reference steel specified in the applicable portable tank instruction indicated in Column (10) of table A of Chapter 3.2 and described in 4.2.4.2.6 or by a portable tank special provision indicated in Column (11) of table A of Chapter 3.2 and described in 4.2.4.3;

d_1 = diameter of the shell (in m), but not less than 1,80 m;

Rm_1 = guaranteed minimum tensile strength (in N/mm^2) of the metal to be used (see 6.7.2.3.3);

A_1 = guaranteed minimum elongation at fracture (in %) of the metal to be used according to national or international standards.

6.7.2.4.8. In no case shall the wall thickness be less than that prescribed in 6.7.2.4.2, 6.7.2.4.3 and 6.7.2.4.4. All parts of the shell shall have a minimum thickness as determined by 6.7.2.4.2 to 6.7.2.4.4. This thickness shall be exclusive of any corrosion allowance.

6.7.2.4.9. When mild steel is used (see 6.7.2.1), calculation using the formula in 6.7.2.4.6 is not required.

6.7.2.4.10. There shall be no sudden change of plate thickness at the attachment of the ends (heads) to the cylindrical portion of the shell.

6.7.2.5. Service equipment

6.7.2.5.1. Service equipment shall be so arranged as to be protected against the risk of being wrenched off or damaged during handling and transport. When the connection between the frame and the shell allows relative movement between the sub-assemblies, the equipment shall be so fastened as to permit such movement without risk of damage to working parts. The external discharge fittings (pipe sockets, shut-off devices), the internal stop-valve and its seating shall be protected against the danger of being wrenched off by external forces (for example using shear sections). The filling and discharge devices (including flanges or threaded plugs) and any protective caps shall be capable of being secured against unintended opening.

6.7.2.5.2. All openings in the shell, intended for filling or discharging the portable tank shall be fitted with a manually operated stop-valve located as close to the shell as reasonably practicable. Other openings, except for openings leading to venting or pressure-relief devices, shall be equipped with either a stop-valve or another suitable means of closure located as close to the shell as reasonably practicable.

6.7.2.5.3. All portable tanks shall be fitted with a manhole or other inspection openings of a suitable size to allow for internal inspection and adequate access for maintenance and repair of the interior. Compartmented portable tanks shall have a manhole or other inspection openings for each compartment.

6.7.2.5.4. As far as reasonably practicable, external fittings shall be grouped together. For insulated portable tanks, top fittings shall be surrounded by a spill collection reservoir with suitable drains.

6.7.2.5.5. Each connection to a portable tank shall be clearly marked to indicate its function.

6.7.2.5.6. Each stop-valve or other means of closure shall be designed and constructed to a rated pressure not less than the MAWP of the shell taking into account the temperatures expected during transport. All stop-valves with screwed spindles shall close by a clockwise motion of the handwheel. For other stop-valves the position (open and closed) and direction of closure shall be clearly indicated. All stop-valves shall be designed to prevent unintentional opening.

6.7.2.5.7. No moving parts, such as covers, components of closures, etc., shall be made of unprotected corrodible steel when they are liable to come into frictional or percussive contact with aluminium portable tanks intended for the carriage of substances meeting the flash-point criteria of Class 3 including elevated temperature substances carried at or above their flash-point.

6.7.2.5.8. Piping shall be designed, constructed and installed so as to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping shall be of a suitable metallic material. Welded pipe joints shall be used wherever possible.

6.7.2.5.9. Joints in copper tubing shall be brazed or have an equally strong metal union. The melting point of brazing materials shall be no lower than 525 °C. The joints shall not decrease the strength of the tubing as may happen when cutting threads.

6.7.2.5.10. The burst pressure of all piping and pipe fittings shall be not less than the highest of four times the MAWP of the shell or four times the pressure to which it may be subjected in service by the action of a pump or other device (except pressure-relief devices).

Ductile metals shall be used in the construction of valves and accessories.

6.7.2.6. Bottom openings

6.7.2.6.1. Certain substances shall not be carried in portable tanks with bottom openings. When the applicable portable tank instruction identified in Column (10) of table A of Chapter 3.2 and described in 4.2.4.2.6 indicates that bottom openings are prohibited there shall be no openings below the liquid level of the shell when it is filled to its maximum permissible filling limit. When an existing opening is closed it shall be accomplished by internally and externally welding one plate to the shell.

6.7.2.6.2. Bottom discharge outlets for portable tanks carrying certain solid, crystallizable or highly viscous substances shall be equipped with not less than two serially fitted and mutually independent shut-off devices. The design of the equipment shall be to the satisfaction of the competent authority or its authorized body and shall include:

(a) An external stop-valve fitted as close to the shell as reasonably practicable; and

(b) A liquid tight closure at the end of the discharge pipe, which may be a bolted blank flange or a screw cap.

6.7.2.6.3. Every bottom discharge outlet, except as provided in 6.7.2.6.2, shall be equipped with three serially fitted and mutually independent shut-off devices. The design of the equipment shall be to the satisfaction of the competent authority or its authorized body and include:

(a) A self-closing internal stop-valve, that is a stop-valve within the shell or within a welded flange or its companion flange, such that:

(i) The control devices for the operation of the valve are designed so as to prevent any unintended opening through impact or other inadvertent act;

(ii) The valve may be operable from above or below;

(iii) If possible, the setting of the valve (open or closed) shall be capable of being verified from the ground;

(iv) Except for portable tanks having a capacity of not more than 1 000 litres, it shall be possible to close the valve from an accessible position of the portable tank that is remote from the valve itself; and

(v) The valve shall continue to be effective in the event of damage to the external device for controlling the operation of the valve;

(b) An external stop-valve fitted as close to the shell as reasonably practicable; and

(c) A liquid tight closure at the end of the discharge pipe, which may be a bolted blank flange or a screw cap.

6.7.2.6.4. For a lined shell, the internal stop-valve required by 6.7.2.6.3(a) may be replaced by an additional external stop-valve. The manufacturer shall satisfy the requirements of the competent authority or its authorized body.

6.7.2.7. Safety relief devices

6.7.2.7.1. All portable tanks shall be fitted with at least one pressure-relief device. All relief devices shall be designed, constructed and marked to the satisfaction of the competent authority or its authorized body.

6.7.2.8. Pressure-relief devices

6.7.2.8.1. Every portable tank with a capacity not less than 1 900 litres and every independent compartment of a portable tank with a similar capacity, shall be provided with one or more pressure-relief devices of the spring-loaded type and may in addition have a frangible disc or fusible element in parallel with the spring-loaded devices except when prohibited by reference to 6.7.2.8.3 in the applicable portable tank instruction in 4.2.4.2.6. The pressurerelief devices shall have sufficient capacity to prevent rupture of the shell due to over pressurization or vacuum resulting from filling, discharging, or from heating of the contents.

6.7.2.8.2. Pressure-relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure.

6.7.2.8.3. When required for certain substances by the applicable portable tank instruction identified in Column (10) of table A of Chapter 3.2 and described in 4.2.4.2.6, portable tanks shall have a pressure-relief device approved by the competent authority. Unless a portable tank in dedicated service is fitted with an approved relief device constructed of materials compatible with the load, the relief device shall comprise a frangible disc preceding a spring-loaded pressure-relief device. When a frangible disc is inserted in series with the required pressure-relief device, the space between the frangible disc and the pressure-relief device shall be provided with a pressure gauge or suitable tell-tale indicator for the detection of disc rupture, pin holing, or leakage which could cause a malfunction of the pressure-relief system. The frangible disc shall rupture at a nominal pressure 10 % above the start to discharge pressure of the relief device.

6.7.2.8.4. Every portable tank with a capacity less than 1 900 litres shall be fitted with a pressurerelief device which may be a frangible disc when this disc complies with the requirements of 6.7.2.11.1. When no spring-loaded pressure-relief device is used, the frangible disc shall be set to rupture at a nominal pressure equal to the test pressure.

6.7.2.8.5. When the shell is fitted for pressure discharge, the inlet line shall be provided with a suitable pressure-relief device set to operate at a pressure not higher than the MAWP of the shell, and a stop-valve shall be fitted as close to the shell as reasonably practicable.

6.7.2.9. Setting of pressure-relief devices

6.7.2.9.1. It shall be noted that the pressure-relief devices shall operate only in conditions of excessive rise in temperature, since the shell shall not be subject to undue fluctuations of pressure during normal conditions of transport (see 6.7.2.12.2).

6.7.2.9.2. The required pressure-relief device shall be set to start-to-discharge at a nominal pressure of five-sixths of the test pressure for shells having a test pressure of not more than 4,5 bar and 110 % of two-thirds of the test pressure for shells having a test pressure of more than 4,5 bar. After discharge the device shall close at a pressure not more than 10 % below the pressure at which the discharge starts. The device shall remain closed at all lower pressures. This requirement does not prevent the use of vacuum-relief or combination pressure-relief and vacuum-relief devices.

6.7.2.10. Fusible elements

6.7.2.10.1. Fusible elements shall operate at a temperature between 110 °C and 149 °C on condition that the pressure in the shell at the fusing temperature will be not more than the test pressure. They shall be placed at the top of the shell with their inlets in the vapour space and in no case shall they be shielded from external heat. Fusible elements shall not be utilized on portable tanks with a test pressure which exceeds 2,65 bar. Fusible elements used on portable tanks intended for the carriage of elevated temperature substances shall be designed to operate at a temperature higher than the maximum temperature that will be experienced during transport and shall be to the satisfaction of the competent authority or its authorized body.

6.7.2.11. Frangible discs

6.7.2.11.1. Except as specified in 6.7.2.8.3, frangible discs shall be set to rupture at a nominal pressure equal to the test pressure throughout the design temperature range. Particular attention shall be given to the requirements of 6.7.2.5.1 and 6.7.2.8.3 if frangible discs are used.

6.7.2.11.2. Frangible discs shall be appropriate for the vacuum pressures which may be produced in the portable tank.

6.7.2.12. Capacity of pressure-relief devices

6.7.2.12.1. The spring-loaded pressure-relief device required by 6.7.2.8.1 shall have a minimum cross sectional flow area equivalent to an orifice of 31,75 mm diameter. Vacuum-relief devices, when used, shall have a cross sectional flow area not less than 284 mm^2.

6.7.2.12.2. The combined delivery capacity of the relief devices in conditions of complete fire engulfment of the portable tank shall be sufficient to limit the pressure in the shell to 20 % above the start-to-discharge pressure of the pressure relief device. Emergency pressure-relief devices may be used to achieve the full relief capacity prescribed. These devices may be fusible, spring loaded or frangible disc components, or a combination of spring-loaded and frangible disc devices. The total required capacity of the relief devices may be determined using the formula in 6.7.2.12.2.1 or the table in 6.7.2.12.2.3.

6.7.2.12.2.1. To determine the total required capacity of the relief devices, which shall be regarded as being the sum of the individual capacities of all the contributing devices, the following formula shall be used:

$$Q = 12,4 \frac{FA^{0,82}}{LC} \sqrt{\frac{ZT}{M}}$$

where:

Q = minimum required rate of discharge in cubic metres of air per second (m^3/s) at standard conditions: 1 bar and 0 °C (273 K);

F = a coefficient with the following value:

for uninsulated shells F = 1;

for insulated shells F = U(649 — t)/13,6 but in no case is less than 0,25 where:

where:

U = thermal conductance of the insulation, in $kW.m^{-2}.\ K^{-1}$, at 38 °C;

t = actual temperature of the substance during filling (in °C); when this temperature is unknown, let t = 15 °C:

The value of F given above for insulated shells may be taken provided that the insulation is in conformity with 6.7.2.12.2.4;

A = total external surface area of shell in square metres;

Z = the gas compressibility factor in the accumulating condition (when this factor is unknown, let Z equal 1,0);

T = absolute temperature in Kelvin (°C + 273) above the pressure-relief devices in the accumulating condition;

L = the latent heat of vaporization of the liquid, in kJ/kg, in the accumulating condition;

M = molecular mass of the discharged gas;

C = a constant which is derived from one of the following formulae as a function of the ratio k of specific heats:

$$k = \frac{c_p}{c_v}$$

where:

c_p = is the specific heat at constant pressure; and

c_v = is the specific heat at constant volume.

When $k > 1$:

$$C = \sqrt{k\left(\frac{2}{k+1}\right)^{\frac{k+1}{k-1}}}$$

When $k = 1$ or or k is unknown:

$$C = \frac{1}{\sqrt{e}} = 0{,}607$$

where e is the mathematical constant 2,7183

C may also be taken from the following table:

k	C	k	C	k	C
1,00	0,607	1,26	0,660	1,52	0,704
1,02	0,611	1,28	0,664	1,54	0,707
1,04	0,615	1,30	0,667	1,56	0,710
1,06	0,620	1,32	0,671	1,58	0,713
1,08	0,624	1,34	0,674	1,60	0,716
1,10	0,628	1,36	0,678	1,62	0,719
1,12	0,633	1,38	0,681	1,64	0,722
1,14	0,637	1,40	0,685	1,66	0,725
1,16	0,641	1,42	0,688	1,68	0,728
1,18	0,645	1,44	0,691	1,70	0,731
1,20	0,649	1,46	0,695	2,00	0,770
1,22	0,652	1,48	0,698	2,20	0,793
1,24	0,656	1,50	0,701		

6.7.2.12.2.2. As an alternative to the formula above, shells designed for the carriage of liquids may have their relief devices sized in accordance with the table in 6.7.2.12.2.3. This table assumes an insulation value of F = 1 and shall be adjusted accordingly when the shell is insulated. Other values used in determining this table are:

M = 86,7

L = 334,94 kJ/kg

Z = 1

T = 394 K

C = 0,607

6.7.2.12.2.3. Minimum emergency vent capacity, Q, in cubic metres of air per second at 1 bar and 0 °C (273 K)

A Exposed area (square metres)	Q (Cubic metres of air per second)	A Exposed area (square metres)	Q (Cubic metres of air per second)
2	0,230	37,5	2,539
3	0,320	40	2,677
4	0,405	42,5	2,814
5	0,487	45	2,949
6	0,565	47,5	3,082
7	0,641	50	3,215
8	0,715	52,5	3,346
9	0,788	55	3,476
10	0,859	57,5	3,605
12	0,998	60	3,733
14	1,132	62,5	3,860
16	1,263	65	3,987
18	1,391	67,5	4,112
20	1,517	70	4,236
22,5	1,670	75	4,483
25	1,821	80	4,726
27,5	1,969	85	4,967
30	2,115	90	5,206
32,5	2,258	95	5,442
35	2,400	100	5,676

6.7.2.12.2.4. Insulation systems, used for the purpose of reducing venting capacity, shall be approved by the competent authority or its authorized body. In all cases, insulation systems approved for this purpose shall:

(a) Remain effective at all temperatures up to 649 °C; and

(b) Be jacketed with a material having a melting point of 700 °C or greater.

6.7.2.13. Marking of pressure-relief devices

6.7.2.13.1. Every pressure-relief device shall be clearly and permanently marked with the following:

(a) The pressure (in bar or kPa) or temperature (in °C) at which it is set to discharge;

(b) The allowable tolerance at the discharge pressure for spring-loaded devices;

(c) The reference temperature corresponding to the rated pressure for frangible discs;

(d) The allowable temperature tolerance for fusible elements; and

(e) The rated flow capacity of the device in standard cubic metres of air per second (m^3/s);

When practicable, the following information shall also be shown:

(f) The manufacturer's name and relevant catalogue number of the pressure relief device.

6.7.2.13.2. The rated flow capacity marked on the pressure-relief devices shall be determined according to ISO 4126-1:1991.

6.7.2.14. Connections to pressure-relief devices

6.7.2.14.1. Connections to pressure-relief devices shall be of sufficient size to enable the required discharge to pass unrestricted to the safety device. No stop-valve shall be installed between the shell and the pressure-relief devices except where duplicate devices are provided for maintenance or other reasons and the stop-valves serving the devices actually in use are locked open or the stop-valves are interlocked so that at least one of the duplicate devices is always in use. There shall be no obstruction in an opening leading to a vent or pressurerelief device which might restrict or cut-off the flow from the shell to that device. Vents or pipes from the pressure-relief device outlets, when used, shall deliver the relieved vapour or liquid to the atmosphere in conditions of minimum back-pressure on the relieving devices.

6.7.2.15. Siting of pressure-relief devices

6.7.2.15.1. Each pressure-relief device inlet shall be situated on top of the shell in a position as near the longitudinal and transverse centre of the shell as reasonably practicable. All pressurerelief device inlets shall under maximum filling conditions be situated in the vapour space of the shell and the devices shall be so arranged as to ensure the escaping vapour is discharged unrestrictedly. For flammable substances, the escaping vapour shall be directed away from the shell in such a manner that it cannot impinge upon the shell. Protective devices which deflect the flow of vapour are permissible provided the required relief-device capacity is not reduced.

6.7.2.15.2. Arrangements shall be made to prevent access to the pressure-relief devices by unauthorized persons and to protect the devices from damage caused by the portable tank overturning.

6.7.2.16. Gauging devices

6.7.2.16.1. Glass level-gauges and gauges made of other fragile material, which are in direct communication with the contents of the tank shall not be used.

6.7.2.17. Portable tank supports, frameworks, lifting and tie-down attachments

6.7.2.17.1. Portable tanks shall be designed and constructed with a support structure to provide a secure base during transport. The forces specified in 6.7.2.2.12 and the safety factor specified in 6.7.2.2.13 shall be considered in this aspect of the design. Skids, frameworks, cradles or other similar structures are acceptable.

6.7.2.17.2. The combined stresses caused by portable tank mountings (e.g. cradles, framework, etc.) and portable tank lifting and tie-down attachments shall not cause excessive stress in any portion of the shell. Permanent lifting and tie-down attachments shall be fitted to all portable tanks. Preferably they shall be fitted to the portable tank supports but may be secured to reinforcing plates located on the shell at the points of support.

6.7.2.17.3. In the design of supports and frameworks the effects of environmental corrosion shall be taken into account.

6.7.2.17.4. Forklift pockets shall be capable of being closed off. The means of closing forklift pockets shall be a permanent part of the framework or permanently attached to the framework. Single compartment portable tanks with a length less than 3.65 m need not have closed off forklift pockets provided that:

(a) The shell including all the fittings are well protected from being hit by the forklift blades; and

(b) The distance between the centres of the forklift pockets is at least half of the maximum length of the portable tank.

6.7.2.17.5. When portable tanks are not protected during transport, according to 4.2.1.2, the shells and service equipment shall be protected against damage to the shell and service equipment resulting from lateral or longitudinal impact or overturning. External fittings shall be protected so as to preclude the release of the shell contents upon impact or overturning of the portable tank on its fittings. Examples of protection include:

(a) Protection against lateral impact which may consist of longitudinal bars protecting the shell on both sides at the level of the median line;

(b) Protection of the portable tank against overturning which may consist of reinforcement rings or bars fixed across the frame;

(c) Protection against rear impact which may consist of a bumper or frame;

(d) Protection of the shell against damage from impact or overturning by use of an ISO frame in accordance with ISO 1496-3:1995.

6.7.2.18. Design approval

6.7.2.18.1. The competent authority or its authorized body shall issue a design approval certificate for any new design of a portable tank. This certificate shall attest that a portable tank has been surveyed by that authority, is suitable for its intended purpose and meets the requirements of this Chapter and where appropriate, the provisions for substances provided in Chapter 4.2 and Chapter 3.2. When a series of portable tanks are manufactured without change in the design, the certificate shall be valid for the entire series. The certificate shall refer to the prototype test report, the substances or group of substances allowed to be carried, the materials of construction of the shell and lining (when applicable) and an approval number. The approval number shall consist of the distinguishing sign or mark of the State in whose territory the approval was granted, i.e. the distinguishing sign for use in international traffic as prescribed by the Convention on Road Traffic, Vienna 1968, and a registration number. Any alternative arrangements according to 6.7.1.2 shall be indicated on the certificate. A design approval may serve for the approval of smaller portable tanks made of materials of the same kind and thickness, by the same fabrication techniques and with identical supports, equivalent closures and other appurtenances.

6.7.2.18.2. The prototype test report for the design approval shall include at least the following:

(a) The results of the applicable framework test specified in ISO 1496-3:1995;

(b) The results of the initial test in 6.7.2.19.3; and

(c) The results of the impact test in 6.7.2.19.1, when applicable.

6.7.2.19. Testing

6.7.2.19.1. For portable tanks meeting the definition of container in the CSC, a prototype representing each design shall be subjected to an impact test. The prototype portable tank shall be shown to be capable of absorbing the forces resulting from an impact not less than 4 times (4 g) the MPGM of the fully loaded portable tank at a duration typical of the mechanical shocks experienced in rail transport. The following is a listing of standards describing methods acceptable for performing the impact test:

— Association of American Railroads,

Manual of Standards and Recommended Practices,

Specifications for Acceptability of Tank Containers (AAR.600), 1992

— Canadian Standards Association (CSA),

Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods (B620-1987)

— Deutsche Bahn AG

Zentralbereich Technik, Minden

Tank-containers, longitudinal dynamic impact test

— Société Nationale des Chemins de Fer Français

C.N.E.S.T. 002-1966.

Tank-containers, longitudinal external stresses and dynamic impact tests

— Spoornet, South Africa

Engineering Development Centre (EDC)

Testing of ISO Tank Containers

Method EDC/TES/023/000/1991-06

6.7.2.19.2. The shell and items of equipment of each portable tank shall be tested before being put into service for the first time (initial test) and thereafter at not more than five-year intervals (5 year periodic test) with an intermediate periodic test (2,5 year periodic test) midway between the 5 year periodic tests. The 2,5 year periodic test may be performed within 3 months before or after the specified date. An exceptional test shall be performed regardless of the date of the last periodic test when necessary according to 6.7.2.19.7.

6.7.2.19.3. The initial test of a portable tank shall include a check of the design characteristics, an internal and external examination of the portable tank and its fittings with due regard to the substances to be carried, and a pressure test. Before the portable tank is put into service, a leakproofness test and a test of the satisfactory operation of all service equipment shall also be performed. When the shell and its fittings have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test.

6.7.2.19.4. The 5-year periodic test shall include an internal and external examination and, as a general rule, a hydraulic pressure test. Sheathing, thermal insulation and the like shall be removed only to the extent required for reliable appraisal of the condition of the portable tank. When the shell and equipment have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test.

6.7.2.19.5. The intermediate 2,5 year periodic test shall at least include an internal and external examination of the portable tank and its fittings with due regard to the substances intended to be carried, a leakproofness test and a test of the satisfactory operation of all service equipment. Sheathing, thermal insulation and the like shall be removed only to the extent required for reliable appraisal of the condition of the portable tank. For portable tanks dedicated to the carriage of a single substance, the 2,5 year internal examination may be waived or substituted by other test methods specified by the competent authority or its authorized body.

6.7.2.19.6. A portable tank may not be filled and offered for transport after the date of expiry of the last 5 year or 2,5 year periodic test as required by 6.7.2.19.2. However a portable tank filled prior to the date of expiry of the last periodic test may be carried for a period not to exceed three months beyond the date of expiry of the last periodic test. In addition, a portable tank may be carried after the date of expiry of the last periodic test:

(a) After emptying but before cleaning, for purposes of performing the next required test prior to refilling; and

(b) Unless otherwise approved by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test, in order to allow the return of dangerous goods for proper disposal or recycling. Reference to this exemption shall be mentioned in the consignment note.

6.7.2.19.7. The exceptional test is necessary when the portable tank shows evidence of damaged or corroded areas, or leakage, or other conditions that indicate a deficiency that could affect the integrity of the portable tank. The extent of the exceptional test shall depend on the amount of damage or deterioration of the portable tank. It shall include at least the 2,5 year test according to 6.7.2.19.5.

6.7.2.19.8. The internal and external examinations shall ensure that:

(a) The shell is inspected for pitting, corrosion, or abrasions, dents, distortions, defects in welds or any other conditions, including leakage, that might render the shell unsafe for transport;

(b) The piping, valves, heating/cooling system, and gaskets are inspected for corroded areas, defects, and other conditions, including leakage, that might render the portable tank unsafe for filling, discharge or transport;

(c) Devices for tightening manhole covers are operative and there is no leakage at manhole covers or gaskets;

(d) Missing or loose bolts or nuts on any flanged connection or blank flange are replaced or tightened;

(e) All emergency devices and valves are free from corrosion, distortion and any damage or defect that could prevent their normal operation. Remote closure devices and selfclosing stop-valves shall be operated to demonstrate proper operation;

(f) Linings, if any, are inspected in accordance with criteria outlined by the lining manufacturer;

(g) Required markings on the portable tank are legible and in accordance with the applicable requirements; and

(h) The framework, supports and arrangements for lifting the portable tank are in a satisfactory condition.

6.7.2.19.9. The tests in 6.7.2.19.1, 6.7.2.19.3, 6.7.2.19.4, 6.7.2.19.5 and 6.7.2.19.7 shall be performed or witnessed by an expert approved by the competent authority or its authorized body. When the pressure test is a part of the test, the test pressure shall be the one indicated on the data plate of the portable tank. While under pressure, the portable tank shall be inspected for any leaks in the shell, piping or equipment.

6.7.2.19.10. In all cases when cutting, burning or welding operations on the shell have been effected, that work shall be to the approval of the competent authority or its authorized body taking into account the pressure vessel code used for the construction of the shell. A pressure test to the original test pressure shall be performed after the work is completed.

6.7.2.19.11. When evidence of any unsafe condition is discovered, the portable tank shall not be returned to service until it has been corrected and the test is repeated and passed.

6.7.2.20. Marking

6.7.2.20.1. Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum at least the following information shall be marked on the plate by stamping or by any other similar method.

Country of manufacture

	U Approval N Country	Approval Number	For Alternative Arrangements (see 6.7.1.2) 'AA'

Manufacturer's name or mark

Manufacturer's serial number

Authorized body for the design approval

Owner's registration number

Year of manufacture

Pressure vessel code to which the shell is designed

Test pressure … bar/kPa gauge [1]

[1] The unit used shall be shown.

MAWP … bar/kPa gauge [1]

External design pressure [1] … bar/kPa gauge [1]

Design temperature range … °C to … °C

Water capacity at 20 °C … litres

Water capacity of each compartment at 20 °C … litres

Initial pressure test date and witness identification

MAWP for heating/cooling system … bar/kPa gauge [1]

Shell material(s) and material standard reference(s)

Equivalent thickness in reference steel (MPGM) … mm

Lining material (when applicable)

Date and type of most recent periodic test(s)

Month … Year … Test pressure … bar/kPa gauge [1]

Stamp of expert who performed or witnessed the most recent test

6.7.2.20.2. The following information shall be marked either on the portable tank itself or on a metal plate firmly secured to the portable tank:

Name of the operator

Name of substance(s) being carried and maximum mean bulk temperature when higher than 50 °C

Maximum permissible gross mass (MPGM) … kg

Unladen (tare) mass … kg

NOTE: For the identification of the substances being carried, see also Part 5.

6.7.2.20.3. If a portable tank is designed and approved for handling in open seas, the words 'OFFSHORE PORTABLE TANK' shall be marked on the identification plate.

6.7.3. *Requirements for the design, construction and testing of portable tanks intended for the carriage of non-refrigerated liquefied gases*

6.7.3.1. Definitions

For the purposes of this section:

Portable tank means a multimodal tank having a capacity of more than 450 litres used for the transport of non-refrigerated liquefied gases. The portable tank includes a shell fitted with service equipment and structural equipment necessary for the transport of gases. The portable tank shall be capable of being loaded and discharged without the removal of its structural equipment. It shall possess stabilizing members external to the shell, and shall be capable of being lifted when full. It shall be designed primarily to be loaded onto a transport vehicle or ship and shall be equipped with skids, mountings or accessories to facilitate mechanical handling. Road tank-vehicles, rail tank-wagons, non-metallic tanks, intermediate bulk containers (IBCs), gas cylinders and large receptacles are not considered to fall within the definition for portable tanks;

Shell means the part of the portable tank which retains the non-refrigerated liquefied gas intended for transport (tank proper), including openings and their closures, but does not include service equipment or structural equipment;

Service equipment means measuring instruments and filling, discharge, venting, safety and insulating devices;

[1] See 6.7.2.2.10.

Structural equipment means the reinforcing, fastening, protective and stabilizing members external to the shell;

Maximum allowable working pressure (MAWP) means a pressure that shall be not less than the highest of the following pressures measured at the top of the shell while in operating position, but in no case less than 7 bar:

(a) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(b) The maximum effective gauge pressure to which the shell is designed, which shall be:

(i) for a non-refrigerated liquefied gas listed in the portable tank instruction T50 in 4.2.4.2.6, the MAWP (in bar) given in T50 portable tank instruction for that gas;

(ii) for other non-refrigerated liquefied gases, not less than the sum of:

— the absolute vapour pressure (in bar) of the non-refrigerated liquefied gas at the design reference temperature minus 1 bar; and

— the partial pressure (in bar) of air or other gases in the ullage space being determined by the design reference temperature and the liquid phase expansion due to the increase of the mean bulk temperature of t_r- t_f (t_f = filling temperature, usually 15 °C; t_r= 50 °C maximum mean bulk temperature);

Design pressure means the pressure to be used in calculations required by a recognized pressure vessel code. The design pressure shall be not less than the highest of the following pressures:

(a) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(b) The sum of:

(i) the maximum effective gauge pressure to which the shell is designed as defined in (b) of the MAWP definition (see above);

(ii) a fluid pressure determined on the basis of the dynamic forces specified in 6.7.3.2.9, but not less than 0,35 bar;

Test pressure means the maximum gauge pressure at the top of the shell during the pressure test;

Leakproofness test means a test using gas subjecting the shell and its service equipment to an effective internal pressure of not less than 25 % of the MAWP;

Maximum permissible gross mass (MPGM) means the sum of the tare mass of the portable tank and the heaviest load authorized for transport;

Reference steel means a steel with a tensile strength of 370 N/mm^2 and an elongation at fracture of 27 %;

Mild steel means a steel with a guaranteed minimum tensile strength of 360 N/mm^2 to 440 N/mm^2 and a guaranteed minimum elongation at fracture conforming to 6.7.3.3.3.3;

Design temperature range for the shell shall be – 40 °C to 50 °C for non-refrigerated liquefied gases carried under ambient conditions. More severe design temperatures shall be considered for portable tanks subjected to severe climatic conditions;

Design reference temperature means the temperature at which the vapour pressure of the contents is determined for the purpose of calculating the MAWP. The design reference temperature shall be less than the critical temperature of the non-refrigerated liquefied gas intended to be carried to ensure that the gas at all times is liquefied. This value for each portable tank type is as follows:

(a) Shell with a diameter of 1,5 metres or less: 65 °C;

(b) Shell with a diameter of more than 1,5 metres:

(i) without insulation or sun shield: 60 °C;

(ii) with sun shield (see 6.7.3.2.12): 55 °C; and

(iii) with insulation (see 6.7.3.2.12) : 50 °C;

means the average mass of non-refrigerated liquefied gas per litre of shell capacity (kg/l). The filling density is given in portable tank instruction T50 in 4.2.4.2.6.

6.7.3.2. General design and construction requirements

6.7.3.2.1. Shells shall be designed and constructed in accordance with the requirements of a pressure vessel code recognized by the competent authority. Shells shall be made of steel suitable for forming. The materials shall in principle conform to national or international material standards. For welded shells, only a material whose weldability has been fully demonstrated shall be used. Welds shall be skilfully made and afford complete safety. When the manufacturing process or the materials make it necessary, the shells shall be suitably heattreated to guarantee adequate toughness in the weld and in the heat affected zones. In choosing the material the design temperature range shall be taken into account with respect to risk of brittle fracture, to stress corrosion cracking and to resistance to impact. When fine grain steel is used, the guaranteed value of the yield strength shall be not more than 460 N/mm^2 and the guaranteed value of the upper limit of the tensile strength shall be not more than 725 N/mm^2 according to the material specification. Portable tank materials shall be suitable for the external environment in which they may be carried.

6.7.3.2.2. Portable tank shells, fittings and pipework shall be constructed of materials which are:

(a) Substantially immune to attack by the non-refrigerated liquefied gas(es) intended to be carried; or

(b) Properly passivated or neutralized by chemical reaction.

6.7.3.2.3. Gaskets shall be made of materials compatible with the non-refrigerated liquefied gas(es) intended to be carried.

6.7.3.2.4. Contact between dissimilar metals which could result in damage by galvanic action shall be avoided.

6.7.3.2.5. The materials of the portable tank, including any devices, gaskets, and accessories, shall not adversely affect the non-refrigerated liquefied gases intended for transport in the portable tank.

6.7.3.2.6. Portable tanks shall be designed and constructed with supports to provide a secure base during transport and with suitable lifting and tie-down attachments.

6.7.3.2.7. Portable tanks shall be designed to withstand, without loss of contents, at least the internal pressure due to the contents, and the static, dynamic and thermal loads during normal conditions of handling and transport. The design shall demonstrate that the effects of fatigue, caused by repeated application of these loads through the expected life of the portable tank, have been taken into account.

6.7.3.2.8. Shells shall be designed to withstand an external pressure (gauge pressure) of at least 0,4 bar gauge above the internal pressure without permanent deformation. When the shell is to be subjected to a significant vacuum before filling or during discharge it shall be designed to withstand an external pressure of at least 0,9 bar gauge above the internal pressure and shall be proven at that pressure.

6.7.3.2.9. Portable tanks and their fastenings shall, under the maximum permissible load, be capable of absorbing the following separately applied static forces:

(a) In the direction of travel: twice the MPGM multiplied by the acceleration due to gravity (g) ([1]);

(b) Horizontally at right angles to the direction of travel: the MPGM (when the direction of travel is not clearly determined, the forces shall be equal to twice the MPGM) multiplied by the acceleration due to gravity (g) ([1]);

(c) Vertically upwards: the MPGM multiplied by the acceleration due to gravity (g) ([1]); and

(d) Vertically downwards: twice the MPGM (total loading including the effect of gravity) multiplied by the acceleration due to gravity ([1]).

6.7.3.2.10. Under each of the forces in 6.7.3.2.9, the safety factor to be observed shall be as follows:

(a) For steels having a clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed yield strength; or

(b) For steels with no clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed 0,2 % proof strength and, for austenitic steels, the 1 % proof strength.

([1]) For calculation purposes, $g=9{,}81 m/s^2$.

6.7.3.2.11. The values of yield strength or proof strength shall be the value according to national or international material standards. When austenitic steels are used, the specified minimum values of yield strength and proof strength according to the material standards may be increased by up to 15 % when greater values are attested in the material inspection certificate. When no material standard exists for the steel in question, the value of yield strength or proof strength used shall be approved by the competent authority.

6.7.3.2.12. When the shells intended for the carriage of non-refrigerated liquefied gases are equipped with thermal insulation, the thermal insulation systems shall satisfy the following requirements:

(a) It shall consist of a shield covering not less than the upper third but not more than the upper half of the surface of the shell and separated from the shell by an air space about 40 mm across; or

(b) It shall consist of a complete cladding of adequate thickness of insulating materials protected so as to prevent the ingress of moisture and damage under normal conditions of transport and so as to provide a thermal conductance of not more than 0,67 ($W.m^{-2}.K^{-1}$);

(c) When the protective covering is so closed as to be gas-tight, a device shall be provided to prevent any dangerous pressure from developing in the insulating layer in the event of inadequate gas tightness of the shell or of its items of equipment; and

(d) The thermal insulation shall not inhibit access to the fittings and discharge devices.

6.7.3.2.13. Portable tanks intended for the carriage of flammable non-refrigerated liquefied gases shall be capable of being electrically earthed.

6.7.3.3. Design criteria

6.7.3.3.1. Shells shall be of a circular cross-section.

6.7.3.3.2. Shells shall be designed and constructed to withstand a test pressure not less than 1,3 times the design pressure. The shell design shall take into account the minimum MAWP values provided in portable tank instruction T50 in 4.2.4.2.6 for each non-refrigerated liquefied gas intended for carriage. Attention is drawn to the minimum shell thickness requirements for these shells specified in 6.7.3.4.

6.7.3.3.3. For steels exhibiting a clearly defined yield point or characterized by a guaranteed proof strength (0,2 % proof strength, generally, or 1 % proof strength for austenitic steels) the primary membrane stress (sigma) in the shell shall not exceed 0,75 Re or 0,5 Rm, whichever is lower, at the test pressure, where:

Re = yield strength in N/mm^2, or 0,2 % proof strength or, for austenitic steels, 1 % proof strength;

Rm = minimum tensile strength in N/mm^2.

6.7.3.3.3.1. The values of Re and Rm to be used shall be the specified minimum values according to national or international material standards. When austenitic steels are used, the specified minimum values for Re and Rm according to the material standards may be increased by up to 15 % when greater values are attested in the material inspection certificate. When no material standard exists for the steel in question, the values of Re and Rm used shall be approved by the competent authority or its authorized body.

6.7.3.3.3.2. Steels which have a Re/Rm ratio of more than 0.85 are not allowed for the construction of welded shells. The values of Re and Rm to be used in determining this ratio shall be the values specified in the material inspection certificate.

6.7.3.3.3.3. Steels used in the construction of shells shall have an elongation at fracture, in %, of not less than 10 000/Rm with an absolute minimum of 16 % for fine grain steels and 20 % for other steels.

6.7.3.3.3.4. For the purpose of determining actual values for materials, it shall be noted that for sheet metal, the axis of the tensile test specimen shall be at right angles (transversely) to the direction of rolling. The permanent elongation at fracture shall be measured on test specimens of rectangular cross sections in accordance with ISO 6892:1998 using a 50 mm gauge length.

6.7.3.4. Minimum shell thickness

6.7.3.4.1. The minimum shell thickness shall be the greater thickness based on:

(a) The minimum thickness determined in accordance with the requirements in 6.7.3.4; and

(b) The minimum thickness determined in accordance with the recognized pressure vessel code including the requirements in 6.7.3.3.

6.7.3.4.2. The cylindrical portions, ends (heads) and manhole covers of shells of not more than 1,80 m in diameter shall be not less than 5 mm thick in the reference steel or of equivalent thickness in the steel to be used. Shells of more than 1,80 m in diameter shall be not less than 6 mm thick in the reference steel or of equivalent thickness in the steel to be used.

6.7.3.4.3. The cylindrical portions, ends (heads) and manhole covers of all shells shall be not less than 4 mm thick regardless of the material of construction.

6.7.3.4.4. The equivalent thickness of a steel other than the thickness prescribed for the reference steel in 6.7.3.4.2 shall be determined using the following formula:

$$e_1 = \frac{21,4 \times e_o}{\sqrt[3]{Rm_1 \times A_1}}$$

where:

e_1 = required equivalent thickness (in mm) of the steel to be used;

e_o = minimum thickness (in mm) for the reference steel specified in 6.7.3.4.2;

Rm_1 = guaranteed minimum tensile strength (in N/mm^2) of the steel to be used (see 6.7.3.3.3);

A_1 = guaranteed minimum elongation at fracture (in %) of the steel to be used according to national or international standards.

6.7.3.4.5. In no case shall the wall thickness be less than that prescribed in 6.7.3.4.1 to 6.7.3.4.3. All parts of the shell shall have a minimum thickness as determined by 6.7.3.4.1 to 6.7.3.4.3. This thickness shall be exclusive of any corrosion allowance.

6.7.3.4.6. When mild steel is used (see 6.7.3.1), calculation using the formula in 6.7.3.4.4 is not required.

6.7.3.4.7. There shall be no sudden change of plate thickness at the attachment of the ends (heads) to the cylindrical portion of the shell.

6.7.3.5. Service equipment

6.7.3.5.1. Service equipment shall be so arranged as to be protected against the risk of being wrenched off or damaged during handling and transport. When the connection between the frame and the shell allows relative movement between the sub-assemblies, the equipment shall be so fastened as to permit such movement without risk of damage to working parts. The external discharge fittings (pipe sockets, shut-off devices), the internal stop-valve and its seating shall be protected against the danger of being wrenched off by external forces (for example using shear sections). The filling and discharge devices (including flanges or threaded plugs) and any protective caps shall be capable of being secured against unintended opening.

6.7.3.5.2. All openings with a diameter of more than 1,5 mm in shells of portable tanks, except openings for pressure-relief devices, inspection openings and closed bleed holes, shall be fitted with at least three mutually independent shut-off devices in series, the first being an internal stop-valve, excess flow valve or equivalent device, the second being an external stop-valve and the third being a blank flange or equivalent device.

6.7.3.5.2.1. When a portable tank is fitted with an excess flow valve the excess flow valve shall be so fitted that its seating is inside the shell or inside a welded flange or, when fitted externally, its mountings shall be designed so that in the event of impact its effectiveness shall be maintained. The excess flow valves shall be selected and fitted so as to close automatically when the rated flow specified by the manufacturer is reached. Connections and accessories leading to or from such a valve shall have a capacity for a flow more than the rated flow of the excess flow valve.

6.7.3.5.3. For filling and discharge openings the first shut-off device shall be an internal stop-valve and the second shall be a stop-valve placed in an accessible position on each discharge and filling pipe.

6.7.3.5.4. For filling and discharge bottom openings of portable tanks intended for the carriage of flammable and/or toxic non-refrigerated liquefied gases the internal stop-valve shall be a quick closing safety device which closes automatically in the event of unintended movement of the portable tank during filling or discharge or fire engulfment. Except for portable tanks having a capacity of not more than 1 000 litres, it shall be possible to operate this device by remote control.

6.7.3.5.5. In addition to filling, discharge and gas pressure equalizing orifices, shells may have openings in which gauges, thermometers and manometers can be fitted. Connections for such instruments shall be made by suitable welded nozzles or pockets and not be screwed connections through the shell.

6.7.3.5.6. All portable tanks shall be fitted with manholes or other inspection openings of suitable size to allow for internal inspection and adequate access for maintenance and repair of the interior.

6.7.3.5.7. External fittings shall be grouped together so far as reasonably practicable.

6.7.3.5.8. Each connection on a portable tank shall be clearly marked to indicate its function.

6.7.3.5.9. Each stop-valve or other means of closure shall be designed and constructed to a rated pressure not less than the MAWP of the shell taking into account the temperatures expected during transport. All stop-valves with screwed spindles shall close by a clockwise motion of the handwheel. For other stop-valves the position (open or closed) and direction of closure shall be clearly indicated. All stop-valves shall be designed to prevent unintentional opening.

6.7.3.5.10. Piping shall be designed, constructed and installed so as to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping shall be of suitable metallic material. Welded pipe joints shall be used wherever possible.

6.7.3.5.11. Joints in copper tubing shall be brazed or have an equally strong metal union. The melting point of brazing materials shall be no lower than 525 °C. The joints shall not decrease the strength of tubing as may happen when cutting threads.

6.7.3.5.12. The burst pressure of all piping and pipe fittings shall be not less than the highest of four times the MAWP of the shell or four times the pressure to which it may be subjected in service by the action of a pump or other device (except pressure-relief devices).

6.7.3.5.13. Ductile metals shall be used in the construction of valves or accessories.

6.7.3.6. Bottom openings

6.7.3.6.1. Certain non-refrigerated liquefied gases shall not be carried in portable tanks with bottom openings when portable tank instruction T50 in 4.2.4.2.6 indicates that bottom openings are not allowed. There shall be no openings below the liquid level of the shell when it is filled to its maximum permissible filling limit.

6.7.3.7. Pressure-relief devices

6.7.3.7.1. Portable tanks for non-refrigerated liquefied gases shall be provided with one or more spring-loaded pressure-relief devices. The pressure-relief devices shall open automatically at a pressure not less than the MAWP and be fully open at a pressure equal to 110 % of the MAWP. These devices shall, after discharge, close at a pressure not lower than 10 % below the pressure at which discharge starts and shall remain closed at all lower pressures. The pressure-relief devices shall be of a type that will resist dynamic forces including liquid surge. Frangible discs not in series with a spring-loaded pressure-relief device are not permitted.

6.7.3.7.2. Pressure-relief devices shall be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure.

6.7.3.7.3. Portable tanks intended for the carriage of certain non-refrigerated liquefied gases identified in portable tank instruction T50 in 4.2.4.2.6 shall have a pressure-relief device approved by the competent authority. Unless a portable tank in dedicated service is fitted with an approved relief device constructed of materials compatible with the load, such device shall comprise a frangible disc preceding a spring-loaded device. The space between the frangible disc and the device shall be provided with a pressure gauge or a suitable telltale indicator. This arrangement permits the detection of disc rupture, pinholing or leakage which could cause a malfunction of the pressure-relief device. The frangible discs shall rupture at a nominal pressure 10 % above the start-to-discharge pressure of the relief device.

6.7.3.7.4. In the case of multi-purpose portable tanks, the pressure-relief devices shall open at a pressure indicated in 6.7.3.7.1 for the gas having the highest maximum allowable pressure of the gases allowed to be carried in the portable tank.

6.7.3.8. Capacity of relief devices

6.7.3.8.1. The combined delivery capacity of the relief devices shall be sufficient that, in the event of total fire engulfment, the pressure (including accumulation) inside the shell does not exceed 120 % of the MAWP. Spring-loaded relief devices shall be used to achieve the full relief capacity prescribed. In the case of multi-purpose tanks, the combined delivery capacity of the pressure-relief devices shall be taken for the gas which requires the highest delivery capacity of the gases allowed to be carried in the portable tank.

6.7.3.8.1.1. To determine the total required capacity of the relief devices, which shall be regarded as being the sum of the individual capacities of the several devices, the following formula [1] shall be used:

$$Q = 12{,}4 \frac{FA^{0.82}}{LC} \sqrt{\frac{ZT}{M}}$$

where:

Q = minimum required rate of discharge in cubic metres of air per second (m^3/s) at standard conditions: 1 bar and 0 °C (273 K);

F = is a coefficient with the following value:

for uninsulated shells F = 1

for insulated shells F = U(649 − t)/13,6 but in no case is less than 0,25 where:

U = thermal conductance of the insulation, in $kW \cdot m^{-2} \cdot K^{-1}$, at 38 °C;

t = actual temperature of the non-refrigerated liquefied gas during filling (°C); when this temperature is unknown, let *t* = 15 °C;

The value of F given above for insulated shells may be taken provided that the insulation is in conformity with 6.7.3.8.1.2;

A = total external surface area of shell in square metres;

Z = the gas compressibility factor in the accumulating condition (when this factor is unknown, let Z equal 1,0);

T = absolute temperature in Kelvin (°C + 273) above the pressure-relief devices in the accumulating condition;

L = the latent heat of vaporization of the liquid, in kJ/kg, in the accumulating condition;

M = molecular mass of the discharged gas;

C = a constant which may be taken from the following table which is derived from the following equation as a function of the ratio k of specific heats

$$k = \frac{c_p}{c_v}$$

where:

c_p is the specific heat at constant pressure;

c_v is the specific heat at constant volume.

[1] This formula applies to non-refrigerated liquefied gases which have critical temperatures well above the temperature at the accumulating condition. For gases which have critical temperatures near or below the temperature at the accumulating condition, the calculation of the pressure-relief device delivery capacity shall consider further thermodynamic properties of the gas (see for example CGA S-1.2-1995).

when $k > 1$:

$$C = \sqrt{k\left(\frac{2}{k+1}\right)^{\frac{k+1}{k-1}}}$$

when $k = 1$ or k is unknown:

$$C = \frac{1}{\sqrt{e}} = 0{,}607$$

where e is the mathematical constant 2,7183

C may also be taken from the following table:

k	C	k	C	k	C
1,00	0,607	1,26	0,660	1,52	0,704
1,02	0,611	1,28	0,664	1,54	0,707
1,04	0,615	1,30	0,667	1,56	0,710
1,06	0,620	1,32	0,671	1,58	0,713
1,08	0,624	1,34	0,674	1,60	0,716
1,10	0,628	1,36	0,678	1,62	0,719
1,12	0,633	1,38	0,681	1,64	0,722
1,14	0,637	1,40	0,685	1,66	0,725
1,16	0,641	1,42	0,688	1,68	0,728
1,18	0,645	1,44	0,691	1,70	0,731
1,20	0,649	1,46	0,695	2,00	0,770
1,22	0,652	1,48	0,698	2,20	0,793
1,24	0,656	1,50	0,701		

6.7.3.8.1.2. Insulation systems, used for the purpose of reducing the venting capacity, shall be approved by the competent authority or its authorized body. In all cases, insulation systems approved for this purpose shall:

(a) Remain effective at all temperatures up to 649 °C; and

(b) Be jacketed with a material having a melting point of 700 °C or greater.

6.7.3.9. Marking of pressure-relief devices

6.7.3.9.1. Every pressure-relief device shall be plainly and permanently marked with the following:

(a) The pressure (in bar or kPa) at which it is set to discharge;

(b) The allowable tolerance at the discharge pressure for spring-loaded devices;

(c) The reference temperature corresponding to the rated pressure for frangible discs; and

(d) The rated flow capacity of the device in standard cubic metres of air per second (m^3/s).

When practicable, the following information shall also be shown:

(e) The manufacturer's name and relevant catalogue number of the pressure relief device.

6.7.3.9.2. The rated flow capacity marked on the pressure-relief devices shall be determined according to ISO 4126-1:1991.

6.7.3.10. Connections to pressure-relief devices

6.7.3.10.1. Connections to pressure-relief devices shall be of sufficient size to enable the required discharge to pass unrestricted to the safety device. No stop-valve shall be installed between the shell and the pressure-relief devices except when duplicate devices are provided for maintenance or other reasons and the stop-valves serving the devices actually in use are locked open or the stop-valves are interlocked so that at least one of the duplicate devices is always operable and capable of meeting the requirements of 6.7.3.8. There shall be no obstruction in an opening leading to a vent or pressure-relief device which might restrict or cut-off the flow from the shell to that device. Vents from the pressure-relief devices, when used, shall deliver the relieved vapour or liquid to the atmosphere in conditions of minimum back-pressure on the relieving device.

6.7.3.11. Siting of pressure-relief devices

6.7.3.11.1. Each pressure-relief device inlet shall be situated on top of the shell in a position as near the longitudinal and transverse centre of the shell as reasonably practicable. All pressure relief device inlets shall under maximum filling conditions be situated in the vapour space of the shell and the devices shall be so arranged as to ensure that the escaping vapour is discharged unrestrictedly. For flammable non-refrigerated liquefied gases, the escaping vapour shall be directed away from the shell in such a manner that it cannot impinge upon the shell. Protective devices which deflect the flow of vapour are permissible provided the required relief-device capacity is not reduced.

6.7.3.11.2. Arrangements shall be made to prevent access to the pressure-relief devices by unauthorized persons and to protect the devices from damage caused by the portable tank overturning.

6.7.3.12. Gauging devices

6.7.3.12.1. Unless a portable tank is intended to be filled by weight it shall be equipped with one or more gauging devices. Glass level-gauges and gauges made of other fragile material, which are in direct communication with the contents of the shell shall not be used.

6.7.3.13. Portable tank supports, frameworks, lifting and tie-down attachments

6.7.3.13.1. Portable tanks shall be designed and constructed with a support structure to provide a secure base during transport. The forces specified in 6.7.3.2.9 and the safety factor specified in 6.7.3.2.10 shall be considered in this aspect of the design. Skids, frameworks, cradles or other similar structures are acceptable.

6.7.3.13.2. The combined stresses caused by portable tank mountings (e.g. cradles, frameworks, etc.) and portable tank lifting and tie-down attachments shall not cause excessive stress in any portion of the shell. Permanent lifting and tie-down attachments shall be fitted to all portable tanks. Preferably they shall be fitted to the portable tank supports but may be secured to reinforcing plates located on the shell at the points of support.

6.7.3.13.3. In the design of supports and frameworks the effects of environmental corrosion shall be taken into account.

6.7.3.13.4. Forklift pockets shall be capable of being closed off. The means of closing forklift pockets shall be a permanent part of the framework or permanently attached to the framework. Single compartment portable tanks with a length less than 3,65 m need not have closed off forklift pockets provided that:

(a) The shell and all the fittings are well protected from being hit by the forklift blades; and

(b) The distance between the centres of the forklift pockets is at least half of the maximum length of the portable tank.

6.7.3.13.5. When portable tanks are not protected during transport, according to 4.2.2.3, the shells and service equipment shall be protected against damage to the shell and service equipment resulting from lateral or longitudinal impact or overturning. External fittings shall be protected so as to preclude the release of the shell contents upon impact or overturning of the portable tank on its fittings. Examples of protection include:

(a) Protection against lateral impact which may consist of longitudinal bars protecting the shell on both sides at the level of the median line;

(b) Protection of the portable tank against overturning which may consist of reinforcement rings or bars fixed across the frame;

(c) Protection against rear impact which may consist of a bumper or frame;

(d) Protection of the shell against damage from impact or overturning by use of an ISO frame in accordance with ISO 1496-3:1995.

6.7.3.14. Design approval

6.7.3.14.1. The competent authority or its authorized body shall issue a design approval certificate for any new design of a portable tank. This certificate shall attest that the portable tank has been surveyed by that authority, is suitable for its intended purpose and meets the requirements of this Chapter and where appropriate the provisions for gases provided in portable tank instruction T50 in 4.2.4.2.6. When a series of portable tanks are manufactured without change in the design, the certificate shall be valid for the entire series. The certificate shall refer to the prototype test report, the gases allowed to be carried, the materials of construction of the shell and an approval number. The approval number shall consist of the distinguishing sign or mark of the State in whose territory the approval was granted, i.e. the distinguishing sign for use in international traffic, as prescribed by the Convention on Road Traffic, Vienna 1968, and a registration number. Any alternative arrangements according to 6.7.1.2 shall be indicated on the certificate. A design approval may serve for the approval of smaller portable tanks made of materials of the same kind and thickness, by the same fabrication techniques and with identical supports, equivalent closures and other appurtenances.

6.7.3.14.2. The prototype test report for the design approval shall include at least the following:

(a) The results of the applicable framework test specified in ISO 1496-3:1995;

(b) The results of the initial test in 6.7.3.15.3; and

(c) The results of the impact test in 6.7.3.15.1, when applicable.

6.7.3.15. Testing

6.7.3.15.1. For portable tanks meeting the definition of container in the CSC, a prototype representing each design shall be subjected to an impact test. The prototype portable tank shall be shown to be capable of absorbing the forces resulting from an impact not less than 4 times (4 g) the MPGM of the fully loaded portable tank at a duration typical of the mechanical shocks experienced in rail transport. The following is a listing of standards describing methods acceptable for performing the impact test:

— Association of American Railroads,

Manual of Standards and Recommended Practices,

Specifications for Acceptability of Tank Containers (AAR.600), 1992

— Canadian Standards Association (CSA),

Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods (B620-1987)

— Deutsche Bahn AG

Zentralbereich Technik, Minden

Tank-containers, longitudinal dynamic impact test

— Société Nationale des Chemins de Fer Français

C.N.E.S.T. 002-1966.

Tank-containers, longitudinal external stresses and dynamic impact tests

— Spoornet, South Africa

Engineering Development Centre (EDC)

Testing of ISO Tank Containers

Method EDC/TES/023/000/1991-06

6.7.3.15.2. The shell and items of equipment of each portable tank shall be tested before being put into service for the first time (initial test) and thereafter at not more than five-year intervals (5 year periodic test) with an intermediate periodic test (2,5 year periodic test) midway between the 5 year periodic tests. The 2,5 year test may be performed within 3 months before or after the specified date. An exceptional test shall be performed regardless of the last periodic test when necessary according to 6.7.3.15.7.

6.7.3.15.3. The initial test of a portable tank shall include a check of the design characteristics, an internal and external examination of the portable tank and its fittings with due regard to the non-refrigerated liquefied gases to be carried, and a pressure test referring to the test pressures according to 6.7.3.3.2. The pressure test may be performed as a hydraulic test or by using another liquid or gas with the agreement of the competent authority or its authorized body. Before the portable tank is put into service, a leakproofness test and a test of the satisfactory operation of all service equipment shall also be performed. When the shell and its fittings have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test. All welds subject to full stress level in the shell shall be inspected during the initial test by radiographic, ultrasonic, or another suitable nondestructive test method. This does not apply to the jacket.

6.7.3.15.4. The 5 year periodic test shall include an internal and external examination and, as a general rule, a hydraulic pressure test. Sheathing, thermal insulation and the like shall be removed only to the extent required for reliable appraisal of the condition of the portable tank. When the shell and equipment have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test.

6.7.3.15.5. The intermediate 2,5 year periodic test shall at least include an internal and external examination of the portable tank and its fittings with due regard to the non-refrigerated liquefied gases intended to be carried, a leakproofness test and a test of the satisfactory operation of all service equipment. Sheathing, thermal insulation and the like shall be removed only to the extent required for reliable appraisal of the condition of the portable tank. For portable tanks intended for the carriage of a single non-refrigerated liquefied gas, the 2,5 year internal examination may be waived or substituted by other test methods specified by the competent authority or its authorized body.

6.7.3.15.6. A portable tank may not be filled and offered for transport after the date of expiry of the last 5 year or 2,5 year periodic test as required by 6.7.3.15.2. However a portable tank filled prior to the date of expiry of the last periodic test may be carried for a period not to exceed three months beyond the date of expiry of the last periodic test. In addition, a portable tank may be carried after the date of expiry of the last periodic test:

(a) After emptying but before cleaning, for purposes of performing the next test or inspection required prior to refilling; and

(b) Unless otherwise approved by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test, in order to allow the return of dangerous goods for proper disposal or recycling. Reference to this exemption shall be mentioned in the consignment note.

6.7.3.15.7. The exceptional test is necessary when the portable tank shows evidence of damaged or corroded areas, or leakage, or other conditions that indicate a deficiency that could affect the integrity of the portable tank. The extent of the exceptional test shall depend on the amount of damage or deterioration of the portable tank. It shall include at least the 2,5 year test according to 6.7.3.15.5.

6.7.3.15.8. The internal and external examinations shall ensure that:

(a) The shell is inspected for pitting, corrosion, or abrasions, dents, distortions, defects in welds or any other conditions, including leakage, that might render the portable tank unsafe for transport;

(b) The piping, valves, and gaskets are inspected for corroded areas, defects, and other conditions, including leakage, that might render the portable tank unsafe for filling, discharge or transport;

(c) Devices for tightening manhole covers are operative and there is no leakage at manhole covers or gaskets;

(d) Missing or loose bolts or nuts on any flanged connection or blank flange are replaced or tightened;

(e) All emergency devices and valves are free from corrosion, distortion and any damage or defect that could prevent their normal operation. Remote closure devices and selfclosing stop-valves shall be operated to demonstrate proper operation;

(f) Required markings on the portable tank are legible and in accordance with the applicable requirements; and

(g) The framework, the supports and the arrangements for lifting the portable tank are in satisfactory condition.

6.7.3.15.9. The tests in 6.7.3.15.1, 6.7.3.15.3, 6.7.3.15.4, 6.7.3.15.5 and 6.7.3.15.7 shall be performed or witnessed by an expert approved by the competent authority or its authorized body. When the pressure test is a part of the test, the test pressure shall be the one indicated on the data plate of the portable tank. While under pressure, the portable tank shall be inspected for any leaks in the shell, piping or equipment.

6.7.3.15.10. In all cases when cutting, burning or welding operations on the shell have been effected, that work shall be to the approval of the competent authority or its authorized body taking into account the pressure vessel code used for the construction of the shell. A pressure test to the original test pressure shall be performed after the work is completed.

6.7.3.15.11. When evidence of any unsafe condition is discovered, the portable tank shall not be returned to service until it has been corrected and the pressure test is repeated and passed.

6.7.3.16. Marking

6.7.3.16.1. Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements, the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum at least the following information shall be marked on the plate by stamping or by any other similar method.

Country of manufacture

un	U Approval N Country	Approval Number	For Alternative Arrangements (see 6.7.1.2) 'AA'

Manufacturer's name or mark

Manufacturer's serial number

Authorized body for the design approval

Owner's registration number

Year of manufacture

Pressure vessel code to which the shell is designed

Test pressure … bar/kPa gauge (1)

MAWP … bar/kPa gauge (1)

External design pressure (2) … bar/kPa gauge (1)

Design temperature range … °C to … °C

Design reference temperature … °C

Water capacity at 20 °C … litres

Water capacity of each compartment at 20 °C … litres

Initial pressure test date and witness identification

Shell material(s) and material standard reference(s)

Equivalent thickness in reference steel … mm

Date and type of most recent periodic test(s)

Month … Year … Test pressure … bar/kPa gauge (1)

Stamp of expert who performed or witnessed the most recent test

(1) The unit used shall be marked.
(2) See 6.7.3.2.8.

6.7.3.16.2. The following information shall be marked either on the portable tank itself or on a metal plate firmly secured to the portable tank:

Name of the operator

Name of non-refrigerated liquefied gas(es) permitted for transport

Maximum permissible load mass for each non-refrigerated liquefied gas permitted … kg

Maximum permissible gross mass (MPGN) … kg

Unladen (tare) mass … kg

NOTE: For the identification of the non-refrigerated liquefied gases being carried, see also Part 5.

6.7.3.16.3. If a portable tank is designed and approved for handling in open seas, the words 'OFFSHORE PORTABLE TANK' shall be marked on the identification plate.

6.7.4. *Requirements for the design, construction and testing of portable tanks intended for the carriage of refrigerated liquefied gases*

6.7.4.1. Definitions

For the purposes of this section:

Portable tank means a thermally insulated multimodal tank having a capacity of more than 450 litres fitted with service equipment and structural equipment necessary for the transport of refrigerated liquefied gases. The portable tank shall be capable of being loaded and discharged without the removal of its structural equipment. It shall possess stabilizing members external to the tank, and shall be capable of being lifted when full. It shall be designed primarily to be loaded onto a transport vehicle or ship and shall be equipped with skids, mountings or accessories to facilitate mechanical handling. Road tank-vehicles, rail tank-wagons, non-metallic tanks, intermediate bulk containers (IBCs), gas cylinders and large receptacles are not considered to fall within the definition for portable tanks;

Tank means a construction which normally consists of either:

(a) A jacket and one or more inner shells where the space between the shell(s) and the jacket is exhausted of air (vacuum insulation) and may incorporate a thermal insulation system; or

(b) A jacket and an inner shell with an intermediate layer of solid thermally insulating material (e.g. solid foam);

Shell means the part of the portable tank which retains the refrigerated liquefied gas intended for transport (tank proper), including openings and their closures, but does not include service equipment or external structural equipment;

Jacket means the outer insulation cover or cladding which may be part of the insulation system;

Service equipment means measuring instruments and filling, discharge, venting, safety, pressurizing, cooling and thermal insulation devices;

Structural equipment means the reinforcing, fastening, protective and stabilizing members external to the shell;

Maximum allowable working pressure (MAWP) means the maximum effective gauge pressure permissible at the top of the shell of a loaded portable tank in its operating position including the highest effective pressure during filling and discharge;

Test pressure means the maximum gauge pressure at the top of the shell during the pressure test;

Leakproofness test means a test using gas subjecting the shell and its service equipment, to an effective internal pressure not less than 90 % of the MAWP;

Maximum permissible gross mass (MPGM) means the sum of the tare mass of the portable tank and the heaviest load authorized for transport;

Holding time means the time that will elapse from the establishment of the initial filling condition until the pressure has risen due to heat influx to the lowest set pressure of the pressure limiting device(s);

Reference steel means a steel with a tensile strength of 370 N/mm^2 and an elongation at fracture of 27 %;

Minimum design temperature means the temperature which is used for the design and construction of the shell not higher than the lowest (coldest) temperature (service temperature) of the contents during normal conditions of filling, discharge and transport.

6.7.4.2. General design and construction requirements

6.7.4.2.1. Shells shall be designed and constructed in accordance with the requirements of a pressure vessel code recognized by the competent authority. Shells and jackets shall be made of metallic materials suitable for forming. Jackets shall be made of steel. Non-metallic materials may be used for the attachments and supports between the shell and jacket, provided their material properties at the minimum design temperature are proven to be sufficient. The materials shall in principle conform to national or international material standards. For welded shells and jackets only materials whose weldability has been fully demonstrated shall be used. Welds shall be skilfully made and afford complete safety. When the manufacturing process or the materials make it necessary, the shell shall be suitably heat treated to guarantee adequate toughness in the weld and in the heat affected zones. In choosing the material, the minimum design temperature shall be taken into account with respect to risk of brittle fracture, to hydrogen embrittlement, to stress corrosion cracking and to resistance to impact. When fine grain steel is used, the guaranteed value of the yield strength shall be not more than 460 N/mm^2 and the guaranteed value of the upper limit of the tensile strength shall be not more than 725 N/mm^2 in accordance with the material specifications. Portable tank materials shall be suitable for the external environment in which they may be carried.

6.7.4.2.2. Any part of a portable tank, including fittings, gaskets and pipe-work, which can be expected normally to come into contact with the refrigerated liquefied gas carried shall be compatible with that refrigerated liquefied gas.

6.7.4.2.3. Contact between dissimilar metals which could result in damage by galvanic action shall be avoided.

6.7.4.2.4. The thermal insulation system shall include a complete covering of the shell(s) with effective insulating materials. External insulation shall be protected by a jacket so as to prevent the ingress of moisture and other damage under normal transport conditions.

6.7.4.2.5. When a jacket is so closed as to be gas-tight, a device shall be provided to prevent any dangerous pressure from developing in the insulation space.

6.7.4.2.6. Portable tanks intended for the carriage of refrigerated liquefied gases having a boiling point below minus (–) 182 °C at atmospheric pressure shall not include materials which may react with oxygen or oxygen enriched atmospheres in a dangerous manner, when located in parts of the thermal insulation and there is a risk of contact with oxygen or with oxygen enriched fluid.

6.7.4.2.7. Insulating materials shall not deteriorate unduly in service.

6.7.4.2.8. A reference holding time shall be determined for each refrigerated liquefied gas intended for carriage in a portable tank.

6.7.4.2.8.1. The reference holding time shall be determined by a method recognized by the competent authority on the basis of the following:

(a) The effectiveness of the insulation system, determined in accordance with 6.7.4.2.8.2;

(b) The lowest set pressure of the pressure limiting device(s);

(c) The initial filling conditions;

(d) An assumed ambient temperature of 30 °C;

(e) The physical properties of the individual refrigerated liquefied gas intended to be carried.

6.7.4.2.8.2. The effectiveness of the insulation system (heat influx in watts) shall be determined by type testing the portable tank in accordance with a procedure recognized by the competent authority. This test shall consist of either:

(a) A constant pressure test (for example at atmospheric pressure) when the loss of refrigerated liquefied gas is measured over a period of time; or

(b) A closed system test when the rise in pressure in the shell is measured over a period of time.

When performing the constant pressure test, variations in atmospheric pressure shall be taken into account. When performing either tests corrections shall be made for any variation of the ambient temperature from the assumed ambient temperature reference value of 30 °C.

NOTE: For the determination of the actual holding time before each journey, refer to 4.2.3.7.

6.7.4.2.9. The jacket of a vacuum-insulated double-wall tank shall have either an external design pressure not less than 100 kPa (1 bar) gauge pressure calculated in accordance with a recognized technical code or a calculated critical collapsing pressure of not less than 200 kPa (2 bar) gauge pressure. Internal and external reinforcements may be included in calculating the ability of the jacket to resist the external pressure.

6.7.4.2.10. Portable tanks shall be designed and constructed with supports to provide a secure base during transport and with suitable lifting and tie-down attachments.

6.7.4.2.11. Portable tanks shall be designed to withstand, without loss of contents, at least the internal pressure due to the contents, and the static, dynamic and thermal loads during normal conditions of handling and transport. The design shall demonstrate that the effects of fatigue, caused by repeated application of these loads through the expected life of the portable tank, have been taken into account.

6.7.4.2.12. Portable tanks and their fastenings under the maximum permissible load shall be capable of absorbing the following separately applied static forces:

(a) In the direction of travel: twice the MPGM multiplied by the acceleration due to gravity (g) ([1]);

(b) Horizontally at right angles to the direction of travel: the MPGM (when the direction of travel is not clearly determined, the forces shall be equal to twice the MPGM) multiplied by the acceleration due to gravity (g) ([1]);

(c) Vertically upwards: the MPGM multiplied by the acceleration due to gravity (g) ([1]); and

(d) Vertically downwards: twice the MPGM (total loading including the effect of gravity) multiplied by the acceleration due to gravity (g) ([1]).

6.7.4.2.13. Under each of the forces in 6.7.4.2.12, the safety factor to be observed shall be as follows:

(a) For materials having a clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed yield strength; or

(b) For materials with no clearly defined yield point, a safety factor of 1,5 in relation to the guaranteed 0,2 % proof strength or, in case of austenitic steels, the 1 % proof strength.

6.7.4.2.14. The values of yield strength or proof strength shall be the values according to national or international material standards. When austenitic steels are used, the specified minimum values according to the material standards may be increased by up to 15 % when greater values are attested in the material inspection certificate. When no material standard exists for the metal in question, or when non-metallic materials are used the values of yield strength or proof strength shall be approved by the competent authority.

6.7.4.2.15. Portable tanks intended for the carriage of flammable refrigerated liquefied gases shall be capable of being electrically earthed.

6.7.4.3. Design criteria

6.7.4.3.1. Shells shall be of a circular cross section.

6.7.4.3.2. Shells shall be designed and constructed to withstand a test pressure not less than 1,3 times the MAWP. For shells with vacuum insulation the test pressure shall not be less than 1,3 times the sum of the MAWP and 100 kPa (1 bar). In no case shall the test pressure be less than 300 kPa (3 bar) gauge pressure. Attention is drawn to the minimum shell thickness requirements, specified in 6.7.4.4.2 to 6.7.4.4.7.

6.7.4.3.3. For metals exhibiting a clearly defined yield strength or characterized by a guaranteed proof strength (0,2 % proof strength, generally, or 1 % proof strength for austenitic steels) the primary membrane stress σ (sigma) in the shell shall not exceed 0,75 Re or 0,5 Rm, whichever is lower, at the test pressure, where:

Re = yield strength in N/mm^2, or 0,2 % proof strength or, for austenitic steels, 1 % proof strength;

Rm = minimum tensile strength in N/mm^2.

6.7.4.3.3.1. The values of Re and Rm to be used shall be the specified minimum values according to national or international material standards. When austenitic steels are used, the specified minimum values for Re and Rm according to the material standards may be increased by up to 15 % when greater values are attested in the material inspection certificate. When no material standard exists for the metal in question, the values of Re and Rm used shall be approved by the competent authority or its authorized body.

([1]) For calculation purposes g = 9,81 m/s^2.

6.7.4.3.3.2. Steels which have a Re/Rm ratio of more than 0,85 are not allowed for the construction of welded shells. The values of Re and Rm to be used in determining this ratio shall be the values specified in the material inspection certificate.

6.7.4.3.3.3. Steels used in the construction of shells shall have an elongation at fracture, in %, of not less than 10 000/Rm with an absolute minimum of 16 % for fine grain steels and 20 % for other steels. Aluminium and aluminium alloys used in the construction of shells shall have an elongation at fracture, in %, of not less than 10 000/6Rm with an absolute minimum of 12 %.

6.7.4.3.3.4. For the purpose of determining actual values for materials, it shall be noted that for sheet metal, the axis of the tensile test specimen shall be at right angles (transversely) to the direction of rolling. The permanent elongation at fracture shall be measured on test specimens of rectangular cross sections in accordance with ISO 6892:1998 using a 50 mm gauge length.

6.7.4.4. Minimum shell thickness

6.7.4.4.1. The minimum shell thickness shall be the greater thickness based on:

(a) The minimum thickness determined in accordance with the requirements in 6.7.4.4.2 to 6.7.4.4.7; amd

(b) The minimum thickness determined in accordance with the recognized pressure vessel code including the requirements in 6.7.4.3.

6.7.4.4.2. Shells of not more than 1,80 m in diameter shall be not less than 5 mm thick in the reference steel or of equivalent thickness in the metal to be used. Shells of more than 1,80 m in diameter shall be not less than 6 mm thick in the reference steel or of equivalent thickness in the metal to be used.

6.7.4.4.3. Shells of vacuum-insulated tanks of not more than 1,80 m in diameter shall be not less than 3 mm thick in the reference steel or of equivalent thickness in the metal to be used. Such shells of more than 1,80 m in diameter shall be not less than 4 mm thick in the reference steel or of equivalent thickness in the metal to be used.

6.7.4.4.4. For vacuum-insulated tanks, the aggregate thickness of the jacket and the shell shall correspond to the minimum thickness prescribed in 6.7.4.4.2, the thickness of the shell itself being not less than the minimum thickness prescribed in 6.7.4.4.3.

6.7.4.4.5. Shells shall be not less than 3 mm thick regardless of the material of construction.

6.7.4.4.6. The equivalent thickness of a metal other than the thickness prescribed for the reference steel in 6.7.4.4.2 and 6.7.4.4.3 shall be determined using the following formula:

$$e_1 = \frac{21{,}4 \times e_o}{\sqrt[3]{Rm_1 \times A_1}}$$

where:

e_1 = required equivalent thickness (in mm) of the metal to be used;

e_o = minimum thickness (in mm) of the reference steel specified in 6.7.4.4.2 and 6.7.4.4.3;

Rm_1 = guaranteed minimum tensile strength (in N/mm^2) of the metal to be used (see 6.7.4.3.3);

A_1 = guaranteed minimum elongation at fracture (in %) of the metal to be used according to national or international standards.

6.7.4.4.7. In no case shall the wall thickness be less than that prescribed in 6.7.4.4.1 to 6.7.4.4.5. All parts of the shell shall have a minimum thickness as determined by 6.7.4.4.1 to 6.7.4.4.6. This thickness shall be exclusive of any corrosion allowance.

6.7.4.4.8. There shall be no sudden change of plate thickness at the attachment of the ends (heads) to the cylindrical portion of the shell.

6.7.4.5. Service equipment

6.7.4.5.1. Service equipment shall be so arranged as to be protected against the risk of being wrenched off or damaged during handling and transport. When the connection between the frame and the tank or the jacket and the shell allows relative movement, the equipment shall be so fastened as to permit such movement without risk of damage to working parts. The external discharge fittings (pipe sockets, shut-off devices), the stopvalve and its seating shall be protected against the danger of being wrenched off by external forces (for example using shear sections). The filling and discharge devices (including flanges or threaded plugs) and any protective caps shall be capable of being secured against unintended opening.

6.7.4.5.2. Each filling and discharge opening in portable tanks used for the carriage of flammable refrigerated liquefied gases shall be fitted with at least three mutually independent shut-off devices in series, the first being a stop-valve situated as close as reasonably practicable to the jacket, the second being a stop-valve and the third being a blank flange or equivalent device. The shut-off device closest to the jacket shall be a quick closing device, which closes automatically in the event of unintended movement of the portable tank during filling or discharge or fire engulfment. This device shall also be possible to operate by remote control.

6.7.4.5.3. Each filling and discharge opening in portable tanks used for the carriage of nonflammable refrigerated liquefied gases shall be fitted with at least two mutually independent shut-off devices in series, the first being a stop-valve situated as close as reasonably practicable to the jacket, the second a blank flange or equivalent device.

6.7.4.5.4. For sections of piping which can be closed at both ends and where liquid product can be trapped, a method of automatic pressure relief shall be provided to prevent excess pressure build-up within the piping.

6.7.4.5.5. Vacuum insulated tanks need not have an opening for inspection.

6.7.4.5.6. External fittings shall be grouped together so far as reasonably practicable.

6.7.4.5.7. Each connection on a portable tank shall be clearly marked to indicate its function.

6.7.4.5.8. Each stop-valve or other means of closure shall be designed and constructed to a rated pressure not less than the MAWP of the shell taking into account the temperature expected during transport. All stop-valves with a screwed spindle shall be closed by a clockwise motion of the handwheel. In the case of other stop-valves the position (open and closed) and direction of closure shall be clearly indicated. All stop-valves shall be designed to prevent unintentional opening.

6.7.4.5.9. When pressure-building units are used, the liquid and vapour connections to that unit shall be provided with a valve as close to the jacket as reasonably practicable to prevent the loss of contents in case of damage to the pressure-building unit.

6.7.4.5.10. Piping shall be designed, constructed and installed so as to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping shall be of a suitable material. To prevent leakage due to fire, only steel piping and welded joints shall be used between the jacket and the connection to the first closure of any outlet. The method of attaching the closure to this connection shall be to the satisfaction of the competent authority or its authorized body. Elsewhere pipe joints shall be welded when necessary.

6.7.4.5.11. Joints in copper tubing shall be brazed or have an equally strong metal union. The melting point of brazing materials shall be no lower than 525 °C. The joints shall not decrease the strength of the tubing as may happen when cutting threads.

6.7.4.5.12. The materials of construction of valves and accessories shall have satisfactory properties at the lowest operating temperature of the portable tank.

6.7.4.5.13. The burst pressure of all piping and pipe fittings shall be not less than the highest of four times the MAWP of the shell or four times the pressure to which it may be subjected in service by the action of a pump or other device (except pressure-relief devices).

6.7.4.6. Pressure-relief devices

6.7.4.6.1. Every shell shall be provided with not less than two independent spring-loaded pressurerelief devices. The pressure-relief devices shall open automatically at a pressure not less than the MAWP and be fully open at pressure equal to 110 % of the MAWP. These devices shall, after discharge, close at a pressure not lower than 10 % below the pressure at which discharge starts and shall remain closed at all lower pressures. The pressure-relief devices shall be of the type that will resist dynamic forces including surge.

6.7.4.6.2. Shells for non-flammable refrigerated liquefied gases and hydrogen may in addition have frangible discs in parallel with the spring-loaded devices as specified in 6.7.4.7.2 and 6.7.4.7.3.

6.7.4.6.3. Pressure-relief devices shall be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure.

6.7.4.6.4. Pressure-relief devices shall be approved by the competent authority or its authorized body.

6.7.4.7. Capacity and setting of pressure-relief devices

6.7.4.7.1. In the case of the loss of vacuum in a vacuum-insulated tank or of loss of 20 % of the insulation of a tank insulated with solid materials, the combined capacity of all pressure-relief devices installed shall be sufficient so that the pressure (including accumulation) inside the shell does not exceed 120 % of the MAWP.

6.7.4.7.2. For non-flammable refrigerated liquefied gases (except oxygen) and hydrogen, this capacity may be achieved by the use of frangible discs in parallel with the required safety-relief devices. Frangible discs shall rupture at nominal pressure equal to the test pressure of the shell.

6.7.4.7.3. Under the circumstances described in 6.7.4.7.1 and 6.7.4.7.2 together with complete fire engulfment the combined capacity of all pressure-relief devices installed shall be sufficient to limit the pressure in the shell to the test pressure.

6.7.4.7.4. The required capacity of the relief devices shall be calculated in accordance with a welle-stablished technical code recognized by the competent authority ([1]).

6.7.4.8. Marking of pressure-relief devices

6.7.4.8.1. Every pressure-relief device shall be plainly and permanently marked with the following:

(a) The pressure (in bar or kPa) at which it is set to discharge;

(b) The allowable tolerance at the discharge pressure for spring-loaded devices;

(c) The reference temperature corresponding to the rated pressure for frangible discs; and

(d) The rated flow capacity of the device in standard cubic metres of air per second (m^3/s).

When practicable, the following information shall also be shown:

(e) The manufacturer's name and relevant catalogue number of the pressure relief device.

6.7.4.8.2. The rated flow capacity marked on the pressure-relief devices shall be determined according to ISO 4126-1:1991.

6.7.4.9. Connections to pressure-relief devices

6.7.4.9.1. Connections to pressure-relief devices shall be of sufficient size to enable the required discharge to pass unrestricted to the safety device. No stop-valve shall be installed between the shell and the pressure-relief devices except when duplicate devices are provided for maintenance or other reasons and the stop-valves serving the devices actually in use are locked open or the stop-valves are interlocked so that the requirements of 6.7.4.7 are always fulfilled. There shall be no obstruction in an opening leading to a vent or pressurerelief device which might restrict or cut-off the flow from the shell to that device. Pipework to vent the vapour or liquid from the outlet of the pressure-relief devices, when used, shall deliver the relieved vapour or liquid to the atmosphere in conditions of minimum back-pressure on the relieving device.

6.7.4.10. Siting of pressure-relief devices

6.7.4.10.1. All pressure-relief device inlets shall be situated on top of the shell in a position as near the longitudinal and transverse centre of the shell as reasonably practicable. All pressurerelief device inlets shall under maximum filling conditions be situated in the vapour space of the shell and the devices shall be so arranged as to ensure that the escaping vapour is discharged unrestrictedly. For refrigerated liquefied gases, the escaping vapour shall be directed away from the tank and in such a manner that it cannot impinge upon the tank. Protective devices which deflect the flow of vapour are permissible provided the required relief-device capacity is not reduced.

([1]) See for example CGA Pamphlet S-1.2-1995.

6.7.4.10.2. Arrangements shall be made to prevent access to the devices by unauthorized persons and to protect the devices from damage caused by the portable tank overturning.

6.7.4.11. Gauging devices

6.7.4.11.1. Unless a portable tank is intended to be filled by weight, it shall be equipped with one or more gauging devices. Glass level-gauges and gauges made of other fragile material, which are in direct communication with the contents of the shell shall not be used.

6.7.4.11.2. A connection for a vacuum gauge shall be provided in the jacket of a vacuum-insulated portable tank.

6.7.4.12. Portable tank supports, frameworks, lifting and tie-down attachments

6.7.4.12.1. Portable tanks shall be designed and constructed with a support structure to provide a secure base during transport. The forces specified in 6.7.4.2.12 and the safety factor specified in 6.7.4.2.13 shall be considered in this aspect of the design. Skids, frameworks, cradles or other similar structures are acceptable.

6.7.4.12.2. The combined stresses caused by portable tank mountings (e.g. cradles, frameworks, etc.) and portable tank lifting and tie-down attachments shall not cause excessive stress in any portion of the tank. Permanent lifting and tie-down attachments shall be fitted to all portable tanks. Preferably they shall be fitted to the portable tank supports but may be secured to reinforcing plates located on the tank at the points of support.

6.7.4.12.3. In the design of supports and frameworks the effects of environmental corrosion shall be taken into account.

6.7.4.12.4. Forklift pockets shall be capable of being closed off. The means of closing forklift pockets shall be a permanent part of the framework or permanently attached to the framework. Single compartment portable tanks with a length less than 3,65 m need not have closed off forklift pockets provided that:

(a) The tank and all the fittings are well protected from being hit by the forklift blades; and

(b) The distance between the centres of the forklift pockets is at least half of the maximum length of the portable tank.

6.7.4.12.5. When portable tanks are not protected during transport, according to 4.2.2.3, the shells and service equipment shall be protected against damage to the shell and service equipment resulting from lateral or longitudinal impact or overturning. External fittings shall be protected so as to preclude the release of the shell contents upon impact or overturning of the portable tank on its fittings. Examples of protection include:

(a) Protection against lateral impact which may consist of longitudinal bars protecting the shell on both sides at the level of the median line;

(b) Protection of the portable tank against overturning which may consist of reinforcement rings or bars fixed across the frame;

(c) Protection against rear impact which may consist of a bumper or frame;

(d) Protection of the shell against damage from impact or overturning by use of an ISO frame in accordance with ISO 1496-3:1995;

(e) Protection of the portable tank from impact or overturning by a vacuum insulation jacket.

6.7.4.13. Design approval

6.7.4.13.1. The competent authority or its authorized body shall issue a design approval certificate for any new design of a portable tank. This certificate shall attest that a portable tank has been surveyed by that authority, is suitable for its intended purpose and meets the requirements of this Chapter. When a series of portable tanks are manufactured without change in the design, the certificate shall be valid for the entire series. The certificate shall refer to the prototype test report, the refrigerated liquefied gases allowed to be carried, the materials of construction of the tank and jacket and an approval number. The approval number shall consist of the distinguishing sign or mark of the State in whose territory the approval was granted, i.e. the distinguishing sign for use in international traffic, as prescribed by the Convention on Road Traffic, Vienna 1968, and a registration number. Any alternative arrangements according to 6.7.1.2 shall be indicated on the certificate. A design approval may serve for the approval of smaller portable tanks made of materials of the same kind and thickness, by the same fabrication techniques and with identical supports, equivalent closures and other appurtenances.

6.7.4.13.2. The prototype test report for the design approval shall include at least the following:

(a) The results of the applicable framework test specified in ISO 1496-3:1995;

(b) The results of the initial test in 6.7.4.14.3; and

(c) The results of the impact test in 6.7.4.14.1, when applicable.

6.7.4.14. Testing

6.7.4.14.1. For portable tanks meeting the definition of container in the CSC, a prototype representing each design shall be subjected to an impact test. The prototype portable tank shall be shown to be capable of absorbing the forces resulting from an impact not less than 4 times (4 g) the MPGM of the fully loaded portable tank at a duration typical of the mechanical shocks experienced in rail transport. The following is a listing of standards describing methods acceptable for performing the impact test:

— Association of American Railroads,

Manual of Standards and Recommended Practices,

Specifications for Acceptability of Tank Containers (AAR.600), 1992

— Canadian Standards Association (CSA),

Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods (B620-1987)

— Deutsche Bahn AG

Zentralbereich Technik, Minden

Tank-container, longitudinal dynamic impact test

— Société Nationale des Chemins de Fer Français

C.N.E.S.T. 002-1966.

Tank containers, longitudinal external stresses and dynamic impact tests

— Spoornet, South Africa

Engineering Development Centre (EDC)

Testing of ISO Tank Containers

Method EDC/TES/023/000/1991-06

6.7.4.14.2. The shell and items of equipment of each portable tank shall be tested before being put into service for the first time (initial test) and thereafter at not more than five-year intervals (5 year periodic test) with an intermediate periodic test (2,5 year periodic test) midway between the 5 year periodic tests. The 2,5 year test may be performed within 3 months before or after the specified date. An exceptional test shall be performed regardless of the last periodic test when necessary according to 6.7.4.14.7.

6.7.4.14.3. The initial test of a portable tank shall include a check of the design characteristics, an internal and external examination of the portable tank shell and its fittings with due regard to the refrigerated liquefied gases to be carried, and a pressure test referring to the test pressures according to 6.7.4.3.2. The pressure test may be performed as a hydraulic test or by using another liquid or gas with the agreement of the competent authority or its authorized body. Before the portable tank is put into service, a leakproofness test and a test of the satisfactory operation of all service equipment shall also be performed. When the shell and its fittings have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test. All welds subject to full stress level shall be inspected during the initial test by radiographic, ultrasonic, or another suitable nondestructive test method. This does not apply to the jacket.

6.7.4.14.4. The 2,5 and 5 year periodic test shall include an external examination of the portable tank and its fittings with due regard to the refrigerated liquefied gases carried, a leakproofness test, a test of the satisfactory operation of all service equipment and a vacuum reading, when applicable. In the case of non-vacuum insulated tanks, the jacket and insulation shall be removed during a 2,5 year and a 5 year periodic inspection but only to the extent necessary for a reliable appraisal.

6.7.4.14.5. In addition, at the 5 year periodic test of non-vacuum insulated tanks the jacket and insulation shall be removed, but only to the extent necessary for a reliable appraisal.

6.7.4.14.6. A portable tank may not be filled and offered for transport after the date of expiry of the last 5 year or 2,5 year periodic test as required by 6.7.4.14.2. However a portable tank filled prior to the date of expiry of the last periodic inspection and test may be carried for a period not to exceed three months beyond the date of expiry of the last periodic test. In addition, a portable tank may be carried after the date of expiry of the last periodic test:

(a) After emptying but before cleaning, for purposes of performing the next required test prior to refilling; and

(b) Unless otherwise approved by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test or inspection, in order to allow the return of dangerous goods for proper disposal or recycling. Reference to this exemption shall be mentioned in the consignment note.

6.7.4.14.7. The exceptional test is necessary when the portable tank shows evidence of damaged or corroded areas, leakage, or any other conditions that indicate a deficiency that could affect the integrity of the portable tank. The extent of the exceptional inspection and test shall depend on the amount of damage or deterioration of the portable tank. It shall include at least the 2,5 year test according to 6.7.4.14.4.

6.7.4.14.8. The internal examination during the initial test shall ensure that the shell is inspected for pitting, corrosion, or abrasions, dents, distortions, defects in welds or any other conditions, that might render the portable tank unsafe for transport.

6.7.4.14.9. The external examination of the portable tank shall ensure that:

(a) The external piping, valves, pressurizing/cooling systems when applicable and gaskets are inspected for corroded areas, defects, or any other conditions, including leakage, that might render the portable tank unsafe for filling, discharge or transport;

(b) There is no leakage at any manhole covers or gaskets;

(c) Missing or loose bolts or nuts on any flanged connection or blank flange are replaced or tightened;

(d) All emergency devices and valves are free from corrosion, distortion and any damage or defect that could prevent their normal operation. Remote closure devices and self-closing stop-valves shall be operated to demonstrate proper operation;

(e) Required markings on the portable tank are legible and in accordance with the applicable requirements; and

(f) The framework, the supports and the arrangements for lifting the portable tank are in satisfactory condition.

6.7.4.14.10. The tests in 6.7.4.14.1, 6.7.4.14.3, 6.7.4.14.4, 6.7.4.14.5 and 6.7.4.14.7 shall be performed or witnessed by an expert approved by the competent authority or its authorized body. When the pressure test is a part of the test, the test pressure shall be the one indicated on the data plate of the portable tank. While under pressure, the portable tank shall be inspected for any leaks in the shell, piping or equipment.

6.7.4.14.11. In all cases when cutting, burning or welding operations on the shell of a portable tank have been effected, that work shall be to the approval of the competent authority or its authorized body taking into account the pressure vessel code used for the construction of the shell. A pressure test to the original test pressure shall be performed after the work is completed.

6.7.4.14.12. When evidence of any unsafe condition is discovered, the portable tank shall not be returned to service until it has been corrected and the test is repeated and passed.

6.7.4.15. Marking

6.7.4.15.1. Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements, the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum at least the following information shall be marked on the plate by stamping or by any other similar method:

Country of manufacture

	U Approval N Country	Approval Number	For Alternative Arrangements (see 6.7.1.2) 'AA'

Manufacturer's name or mark

Manufacturer's serial number

Authorized body for the design approval

Owner's registration number

Year of manufacture

Pressure vessel code to which the tank is designed

Test pressure … bar/kPa gauge [1]

MAWP … bar/kPa gauge [1]

Minimum design temperature… °C

Water capacity at 20 °C … litres

Initial pressure test date and witness identification

Shell material(s) and material standard reference(s)

Equivalent thickness in reference steel … mm

Date and type of most recent periodic test(s)

Month … Year … Test pressure … bar/kPa gauge [1]

Stamp of expert who performed or witnessed the most recent test …

The names, in full, of the gas(es) for whose transport the portable tank is approved

Either 'thermally insulated' or 'vacuum insulated'

effectiveness of the insulation system (heat influx) …Watts (W)

Reference holding time … days (or hours) and initial pressure … bar/kPa gauge [1] and degree of filling … in kg for each refrigerated liquefied gas permitted for transport.

6.7.4.15.2. The following information shall be durably marked either on the portable tank itself or on a metal plate firmly secured to the portable tank.

Name of the owner and the operator

Name of the refrigerated liquefied gas being transported (and minimum mean bulk temperature)

Maximum permissible gross mass (MPGM) … kg

Unladen (tare) mass … kg

Actual holding time for gas being transported … days (or hours)

NOTE: For the identification of the refrigerated liquefied gas(es) being carried, see also Part 5.

[1] The unit used shall be marked.

6.7.4.15.3. If a portable tank is designed and approved for handling in open seas, the words 'OFFSHORE PORTABLE TANK' shall be marked on the identification plate.

CHAPTER 6.8

Requirements for the construction, equipment, type approval, testing and marking of tank wagons, demountable tanks, tank-containers and tank swap bodies, with shells made of metallic materials, and battery-wagons and multiple element gas containers (MEGCs)

NOTE: For portable tanks see Chapter 6.7, for fibre-reinforced plastics tank-containers see Chapter 6.9.

6.8.1. *Scope*

6.8.1.1. The requirements across the whole width of the page apply both to tank wagons, to demountable tanks and battery-wagons, and to tank-containers, tank swap bodies and MEGCs. Those contained in a single column apply only:

— to tank wagons, to demountable tanks and battery-wagons (left hand column);

— to tank-containers, tank swap bodies and MEGCs (right hand column).

6.8.1.2. These requirements shall apply to

tank wagons, demountable tanks and battery-wagons	tank-containers, tank swap bodies and MEGCs

used for the carriage of gaseous, liquid, powdery or granular substances.

6.8.1.3. Section 6.8.2 sets out the requirements applicable to tank wagons, to demountable tanks, tank-containers and tank swap bodies intended for the carriage of substances of all classes and battery-wagons and MEGCs for gases of Class 2. Sections 6.8.3 to 6.8.5 contain special requirements supplementing or modifying the requirements of section 6.8.2.

6.8.1.4. For provisions concerning use of these tanks see Chapter 4.3.

6.8.2. *Requirements applicable to all classes*

6.8.2.1. Construction

Basic principles

6.8.2.1.1. Shells, their service and structural equipment shall be designed to withstand without loss of contents (other than quantities of gas escaping through any degassing vents):

— static and dynamic stresses in normal conditions of carriage as defined in 6.8.2.1.2 and 6.8.2.1.13;

— prescribed minimum stresses as defined in 6.8.2.1.15.

6.8.2.1.2.

Tank wagons shall be constructed as to be capable of withstanding, under the maximum permissible load, the stresses which occur during carriage by rail. As regards these stresses, reference should be made to the tests prescribed by the competent railway authorities.	Tank-containers and their fastenings shall, under the maximum permissible load mass, be capable of absorbing the stresses exerted by: — in the direction of travel: twice the total mass; — horizontally at right angles to the direction of travel: the total mass (where the direction of travel is not clearly determined, twice the total mass in each direction); — vertically upwards: the total mass; — vertically downwards: twice the total mass.

6.8.2.1.3. The walls of the shells shall have at least the thickness specified in

6.8.2.1.17 and 6.8.2.1.18	6.8.2.1.17 to 6.8.2.1.20

6.8.2.1.4. Shells shall be designed and constructed in accordance with the requirements of a technical code recognized by the competent authority, in which the material is chosen and the wall thickness determined taking into account maximum and minimum filling and working temperatures, but the following minimum requirements of 6.8.2.1.6 to 6.8.2.1.26 shall be met.

6.8.2.1.5. Tanks intended to contain certain dangerous substances shall be provided with additional protection. This may take the form of additional thickness of the shell (increased calculation pressure) determined in the light of the dangers inherent in the substances concerned or of a protective device (see the special provisions of 6.8.4).

6.8.2.1.6. Welds shall be skilfully made and shall afford the fullest safety. The execution and checking of welds shall comply with the requirements of 6.8.2.1.23.

6.8.2.1.7. Measures shall be taken to protect shells against the risk of deformation as a result of a negative internal pressure.

Materials for shells

6.8.2.1.8. Shells shall be made of suitable metallic materials which, unless other temperature ranges are prescribed in the various classes, shall be resistant to brittle fracture and to stress corrosion cracking between – 20 °C and + 50 °C.

6.8.2.1.9. The materials of shells or of their protective linings which are in contact with the contents shall not contain substances liable to react dangerously (see 'Dangerous reaction' in 1.2.1) with the contents, to form dangerous compounds, or substantially to weaken the material.

If contact between the substance carried and the material used for the construction of the shell entails a progressive decrease in the thickness of the walls, this thickness shall be increased at manufacture by an appropriate amount. This additional thickness to allow for corrosion shall not be taken into consideration in calculating the thickness of the shell walls.

6.8.2.1.10. For welded shells only materials of faultless weldability whose adequate impact strength at an ambient temperature of – 20 °C can be guaranteed, particularly in the weld seams and the zones adjacent thereto, shall be used.

Water-quenched steel may not be used for welded steel shells. If fine-grained steel is used, the guaranteed value of the yield stress Re shall not exceed 460 N/mm^2 and the guaranteed value of the upper limit of tensile strength Rm shall not exceed 725 N/mm^2, in accordance with the specifications of the material.

6.8.2.1.11. Ratios of Re/Rm exceeding 0,85 are not allowed for steels used in the construction of welded tanks.

Re = apparent yield stress for steels having a clearly-defined yield point or

guaranteed 0,2 % proof stress for steels with no clearly-defined yield point (1 % for austenitic steels)

Rm = tensile strength.

The values specified in the inspection certificate for the material shall be taken as a basis in determining this ratio in each case.

6.8.2.1.12. For steel, the elongation at fracture, in % shall be not less than

$$\frac{10\,000}{\text{determined tensile strength in N/mm}^2}$$

but in any case for fine-grained steels it shall be not less than 16 % and not less than 20 % for other steels.

For aluminium alloys the elongation at fracture shall be not less than 12 % (1)

Calculation of the wall thickness of the shell

6.8.2.1.13. The pressure on which the wall thickness of the shell is based shall not be less than the calculation pressure, but the stresses referred to in 6.8.2.1.1 shall also be taken into account, and, if necessary, the following stresses:

In the case of wagons in which the tank constitutes a self-supporting member, the shell shall be designed to withstand the stresses thus imposed in addition to stresses from other sources.

Under each of these stresses the safety factors to be observed shall be the following:

— for metals having a clearly-defined yield point: a safety factor of 1,5 in relation to the apparent yield stress; or

— for metals with no clearly defined yield point: a safety factor of 1,5 in relation to the guaranteed 0,2 % proof stress (1 % maximum elongation for austenitic steels).

6.8.2.1.14. The calculation pressure is in the second part of the tank code (see 4.3.4.1) according to column (12) of Table A of Chapter 3.2.

When ‘G’ appears, the following requirements shall apply:

(a) Gravity-discharge shells intended for the carriage of substances having a vapour pressure not exceeding 110 kPa (1,1 bar) (absolute pressure) at 50 °C shall be designed for a calculation pressure of twice the static pressure of the substance to be carried but not less than twice the static pressure of water.

(b) Pressure-filled or pressure-discharge shells intended for the carriage of substances having a vapour pressure not exceeding 110 kPa (1,1 bar) (absolute pressure) at 50 °C shall be designed for a calculation pressure equal to 1,3 times the filling or discharge pressure.

When the numerical value of the minimum calculation pressure is given (gauge pressure) the shell shall be designed for this pressure which shall not be less than 1,3 times the filling or discharge pressure. The following minimum requirements shall apply in these cases:

(c) Shells intended for the carriage of substances having a vapour pressure of more than 110 kPa (1,1 bar) but not more than 175 kPa (1,75 bar) (absolute pressure) at 50 °C shall, whatever their filling or discharge system, be designed for a calculation pressure of not less than 150 kPa (1,5 bar) gauge pressure or 1,3 times the filling or discharge pressure, whichever is the higher.

(d) Shells intended for the carriage of substances having a vapour pressure of more than 175 kPa (1,75 bar) (absolute pressure) at 50 °C shall, whatever their filling or discharge system, be designed for a calculation pressure equal to 1,3 times the filling or discharge pressure but not less than 0,4 MPa (4 bar) (gauge pressure).

(1) In the case of sheet metal the axis of the tensile test -piece shall be at right angles to the direction of rolling. The permanent elongation at fracture shall be measured on test -pieces of circular cross — section in which the gauge length l is equal to five times the diameter d (l = 5d); if test-pieces of rectangular section are used, the gauge length shall be calculated by the formula

$$l = 5{,}65\sqrt{F_0}$$

where F_o indicates the initial cross-section area of the test-piece.

6.8.2.1.15. At the test pressure, the stress at the most severely stressed point of the shell shall not exceed the material-dependent limits prescribed below. Allowance shall be made for any weakening due to the welds.

6.8.2.1.16. For all metals and alloys, the stress at the test pressure shall be lower than the smaller of the values given by the following formulae:

$\sigma \leq 0{,}75$ Re or $\sigma \leq 0{,}5$ Rm

where:

Re = apparent yield stress for steels having a clearly-defined yield point or guaranteed 0,2 % proof stress for steels with no clearly-defined yield point (1 % for austenitic steels)

Rm = tensile strength.

The values of Re and Rm to be used shall be specified minimum values according to material standards. If no material standard exists for the metal or alloy in question, the values of Re and Rm used shall be approved by the competent authority or by a body designated by that authority.

When austenitic steels are used, the specified minimum values according to the material standards may be exceeded by up to 15 % if these higher values are attested in the inspection certificate.

Minimum shell thickness

6.8.2.1.17. The thickness of the shell shall not be less than the greater of the values determined by the following formulae:

$$e = \frac{P_T D}{2\sigma\lambda} \qquad e = \frac{P_C D}{2\sigma}$$

where:

e = minimum shell thickness in mm

P_T = test pressure in MPa

P_C = calculation pressure in MPa as specified in 6.8.2.1.14

D = internal diameter of shell in mm

σ = permissible stress, as defined in 6.8.2.1.16, in N/mm^2

λ = a coefficient not exceeding 1, allowing for any weakening due to welds, and linked to the inspection methods defined in 6.8.2.1.23.

The thickness shall in no case be less than that defined in

	6.8.2.1.18	6.8.2.1.18 to 6.8.2.1.20
6.8.2.1.18.	Shells shall be not less than 6 mm thick if of mild steel ([1]), or of equivalent thickness if of another metal. For powdery or granular substances, this thickness may be reduced to 5 mm for mild steel or to an equivalent thickness for other metals.	Shells shall be not less than 5 mm thick if of mild steel ([1]) (in conformity with the requirements of 6.8.2.1.11 and 6.8.2.1.12) or of equivalent thickness if of another metal. Where the diameter is more than 1,80 m, this thickness shall be increased to 6 mm except in the case of tanks intended for the carriage of powdery or granular substances, if the shell is of mild steel ([1]) or to an equivalent thickness if of another metal. Whatever the metal used, the thickness of the shell wall shall in no case be less than 3 mm.

'Equivalent thickness' means the thickness obtained by the following formula: ([2]):

$$e_1 = \frac{21{,}4 \times e_o}{\sqrt[3]{Rm_1 \times A_1}}$$

6.8.2.1.19.	(Reserved)	Where protection of the tank against damage is provided according to 6.8.2.1.20, the competent authority may allow the aforesaid minimum thicknesses to be reduced in proportion to the protection provided; however, the said thicknesses shall be not less than 3 mm in the case of mild steel ([1]), or than an equivalent thickness in the case of other metals, for shells not more than 1,80 m ([3]) in diameter. For shells of a diameter exceeding 1,80 m ([3]) this minimum thickness shall be increased to 4 mm in the case of mild steel ([1]), and to an equivalent thickness in the case of other metals. Equivalent thickness means the thickness given by the formula in 6.8.2.1.18.

([1]) For the definitions of 'mild steel' and 'reference steel' see 1.2.1.

([2]) This formula is derived from the general formula:

$$e_1 = e_o \sqrt[3]{\frac{Rm_o A_o}{Rm_1 A_1}}$$

where:

e_1 = minimum shell thickness for the metal chosen, in mm;

e_o = minimum shell thickness for mild steel, in mm, according to 6.8.2.1.18 and 6.8.2.1.19;

Rm_o = (tensile strength for reference steel, see definition in 1.2.1, in N/mm^2);

A_o = 27 (elongation for reference steel, in %);

Rm_1 = minimum tensile strength of the metal chosen, in N/mm^2;

A_1 = minimum elongation of the metal chosen on fracture under tensile stress, in %.

([3]) For shells not of circular cross -section, for example box -shaped or elliptical shells, the indicated diameters shall correspond to those calculated on the basis of a circular cross -section of the same area. For such shapes of cross -section the radius of convexity of the shell wall shall not exceed 2 000 mm at the sides or 3 000 mm at the top and bottom.

6.8.2.1.20. (Reserved)

The additional protection referred to in 6.8.2.1.19 may consist of:

— overall external structural protection as in 'sandwich' construction where the sheathing is secured to the shell; or

— a structure in which the shell is supported by a complete skeleton including longitudinal and transverse structural members, or

— double-wall construction.

Where the tanks are made with double walls, the space between being evacuated of air, the aggregate thickness of the outer metal wall and the shell wall shall correspond to the minimum wall thickness prescribed in 6.8.2.1.18, the thickness of the wall of the shell itself being not less than the minimum thickness prescribed in 6.8.2.1.19.

Where tanks are made with double walls with an intermediate layer of solid materials at least 50 mm thick, the outer wall shall have a thickness of not less than 0,5 mm if it is made of mild steel [1] or at least 2 mm if it is made of a plastics material reinforced with glass fibre. Solid foam with an impact absorption capacity such as that, for example, of polyurethane foam, may be used as the intermediate layer of solid material.

6.8.2.1.21. (Reserved)

6.8.2.1.22. (Reserved)

Welding and inspection of welds

6.8.2.1.23. The manufacturer's qualification for performing welding operations shall be one recognized by the competent authority. Welding shall be performed by skilled welders using a welding process whose effectiveness (including any heat treatments required) has been demonstrated by test. Non-destructive tests shall be carried out by radiography or by ultrasound and shall confirm that the quality of the welding is appropriate to the stresses.

The following checks shall be carried out in accordance with the value of the coefficient λ used in determining the thickness of the shell in 6.8.2.1.17:

$\lambda = 0,8$: the weld beads shall so far as possible be inspected visually on both faces and shall be subjected to a non-destructive spot check with particular attention to connections;

$\lambda = 0,9$: all longitudinal beads throughout their length, all connections, 25 % of circular beads, and welds for the assembly of large-diameter items of equipment shall be subjected to non-destructive checks. Beads shall be checked visually on both sides as far as possible;

$\lambda = 1,0$: all beads shall be subjected to non-destructive checks and are so far as possible inspected visually on both sides. A weld test-piece shall be taken.

Where the competent authority has doubts regarding the quality of weld beads, it may require additional checks.

(1) For the definitons of 'mild steel' and 'reference steel' see 1.2.1.

Other construction requirements

6.8.2.1.24. The protective lining shall be so designed that its leakproofness remains intact, whatever the deformation liable to occur in normal conditions of carriage (see 6.8.2.1.2).

6.8.2.1.25. The thermal insulation shall be so designed as not to hinder access to, or the operation of, filling and discharge devices and safety valves.

6.8.2.1.26. If shells intended for the carriage of liquids having a flash-point of not more than 61 °C are fitted with non-metallic protective linings (inner layers), the shells and the protective linings shall be so designed that no danger of ignition from electrostatic charges can occur.

6.8.2.1.27. All parts of tank wagons intended for the carriage of liquids having a flash-point of not more than 61 °C and for the carriage of flammable gases, or of UN 1361 carbon or UN 1361 carbon black, Packing Group II, shall be linked to the chassis by means of electrical connection and shall be capable of being electrically earthed. Any metal contact capable of causing electrochemical corrosion shall be avoided.

All parts of a tank-container intended for the carriage of liquids having a flash-point of not more than 61 °C and for the carriage of flammable gases, or of UN 1361 carbon or UN 1361 carbon black, Packing Group II, shall be capable of being electrically earthed. Any metal contact capable of causing electrochemical corrosion shall be avoided.

6.8.2.1.28 (Reserved)

6.8.2.2. Items of equipment

6.8.2.2.1. Suitable non-metallic materials may be used to manufacture equipment and accessories.

The items of equipment shall be so arranged as to be protected against the risk of being wrenched off or damaged during carriage or handling. They shall exhibit a suitable degree of safety comparable to that of the shells themselves, and shall in particular:

— be compatible with the substances carried;

— meet the requirements of 6.8.2.1.1.

The leakproofness of the service equipment shall be ensured even in the event of the tank wagon or tank-container overturning.

Gaskets shall be made of a material compatible with the substance carried and shall be replaced as soon as their effectiveness is impaired, for example as a result of ageing.

Gaskets ensuring the leakproofness of fittings needing to be manipulated during normal use of the tank shall be so designed and arranged that manipulation of the fittings in which they are incorporated does not damage them.

6.8.2.2.2. Each bottom-filling or bottom-discharge opening in tanks for the carriage of certain substances, which are referred to, in column (12) of Table A of Chapter 3.2, with a tank code including the letter 'A' in its third part (see 4.3.4.1.1) shall be equipped with at least two mutually independent closures, mounted in series, comprising

— an external stop-valve with piping made of a malleable metal material and

— a closing device at the end of each pipe which may be a screw-threaded plug, a blank flange or an equivalent device.

Each bottom-filling or bottom-discharge opening in tanks for the carriage of certain substances, which are referred to, in column (12) of Table A of Chapter 3.2, with a tank code including the letter 'B' in its third part (see 4.3.3.1.1 and 4.3.4.1.1) shall be equipped with at least three mutually independent closures, mounted in series, comprising

— an internal stop-valve, i.e. a stop-valve mounted inside the shell or in a welded flange or companion flange;

— an external stop-valve or an equivalent device ([1])

([1]) In the case of tank-containers of a capacity less than 1 m^3 (1 000 litres), this device may be replaced by a blank flange.

one at the end of each pipe	as near as possible to the shell

and

— a closing device at the end of each pipe, which may be a screw-threaded plug, a blank flange or an equivalent device.

However, in the case of tanks intended for the carriage of certain crystallizable or highly viscous substances and shells fitted with an ebonite or thermoplastic coating, the internal stop-valve may be replaced by an external stop-valve provided with additional protection.

The internal stop-valve shall be operable either from above or from below. Its setting — open or closed — shall so far as possible in each case be capable of being verified from the ground. Internal stop-valve control devices shall be so designed as to prevent any unintended opening through impact or an inadvertent act.

The internal shut-off device shall continue to be effective in the event of damage to the external control device.

In order to avoid any loss of contents in the event of damage to the external fittings (pipes, lateral shut-off devices), the internal stop-valve and its seating shall be protected against the danger of being wrenched off by external stresses or shall be so designed as to resist them. The filling and discharge devices (including flanges or threaded plugs) and protective caps (if any) shall be secured against any unintended opening.

The position and/or direction of closure of shut-off devices shall be clearly apparent.

All openings of tanks for the carriage of certain substances, which are referred to in column (12) of Table A of Chapter 3.2, by a tank code including letter 'C' or 'D' in its third part (see 4.3.3.1.1 and 4.3.4.1.1) shall be situated above the surface level of the liquid. These tanks shall have no pipes or pipe connections below the surface level of the liquid. The cleaning openings (fist-holes) are, however, permitted in the lower part of the shell for tanks referred to by a tank code including letter 'C' in its third part. This opening shall be capable of being sealed by a flange so closed as to be leakproof and whose design shall be approved by the competent authority or by a body designated by that authority.

6.8.2.2.3. Unless otherwise prescribed in the provisions of 6.8.4, tanks may have valves to avoid an unacceptable negative internal pressure, without intervening bursting discs.

For tanks with self-operating ventilation valves, the connection between the self-operating ventilation valve and the bottom valve shall be so arranged that the valves do not open in the event of deformation of the tank or the contents cannot escape in the event of their opening.

6.8.2.2.4. The shell or each of its compartments shall be provided with an opening large enough to permit inspection.

6.8.2.2.5. (Reserved)

6.8.2.2.6. Tanks intended for the carriage of liquids having a vapour pressure of not more than 110 kPa (1,1 bar) (absolute) at 50 °C shall have a venting system and a safety device to prevent the contents from spilling out if the shell overturns; otherwise they shall conform to 6.8.2.2.7 or 6.8.2.2.8.

6.8.2.2.7. Tanks intended for the carriage of liquids having a vapour pressure of more than 110 kPa (1,1 bar) but not exceeding 175 kPa (1,75 bar) (absolute) at 50 °C shall have a safety valve set at not less than 150 kPa (1,5 bar) (gauge pressure) and which shall be fully open at a pressure not exceeding the test pressure; otherwise they shall conform to 6.8.2.2.8.

6.8.2.2.8. Tanks intended for the carriage of liquids having a vapour pressure of more than 175 kPa (1,75 bar) but not exceeding 300 kPa (3 bar) (absolute) at 50 °C shall have a safety valve set at not less than 300 kPa (3 bar) gauge pressure and which shall be fully open at a pressure not exceeding the test pressure; otherwise they shall be hermetically closed ([1]).

6.8.2.2.9. Movable parts such as covers, closures, etc., which are liable to come into frictional or percussive contact with aluminium shells intended for the carriage of flammable liquids having a flash-point of not more than 61 °C or for the carriage of flammable gases shall not be made of unprotected corrodible steel.

([1]) For the definition of hermetically closed tank, see 1.2.1.

6.8.2.3. Type approval

6.8.2.3.1. The competent authority or a body designated by that authority shall issue in respect of each new type of tank wagon, demountable tank, tank-container, tank swap body, battery wagon or MEGC a certificate attesting that the prototype, including fastenings, which it has inspected is suitable for the purpose for which it is intended and meets the construction requirements of 6.8.2.1, the equipment requirements of 6.8.2.2 and the special conditions for the classes of substances carried.

The certificate shall show:

— the results of the test;

— an approval number for the prototype;

The approval number shall consist of the distinguishing sign [1] of the State in whose territory the approval was granted and a registration number.

— the tank code in accordance with 4.3.3.1.1 or 4.3.4.1.1;

— special construction (TC) and equipment (TE) requirements (see 6.8.4) applicable to the prototype;

— where applicable, the substances and/or group of substances for the carriage of which the tank has been approved. These shall be shown with their chemical name or the corresponding collective entry (see 2.1.1.2), together with their class, classification code and Packing Group. With the exception of substances of Class 2 and those listed in 4.3.4.1.3, the listing of approved substances may be dispensed with. In such cases, groups of substances permitted on the basis of the tank code shown in the rationalised approach in 4.3.4.1.2 shall be accepted for carriage taking into account any relevant special provision.

The substances referred to in the certificate or the groups of substances approved according to the rationalised approach shall, in general, be compatible with the characteristics of the tank. A reservation shall be included in the certificate if it was not possible to investigate this compatibility exhaustively when the type approval was issued.

6.8.2.3.2. If the tanks, battery-wagons or MEGCs are manufactured in series without modification or according to the prototype, this approval shall be valid for the tanks, battery-wagons or MEGCs manufactured in series or according to the prototype.

A type approval may however serve for the approval of tanks with limited variations of the design that either reduce the loads and stresses on the tanks (e.g. reduced pressure, reduced mass, reduced volume) or increase the safety of the structure (e.g. increased wall thickness, more baffles, decreased diameter of openings). The limited variations shall be clearly described in the type approval certificate.

6.8.2.4. Inspections and tests

6.8.2.4.1. Shells and their equipment shall either together or separately undergo an initial inspection before being put into service. This inspection shall include:

— a check of conformity to the approved prototype;

(1) The distinguishing signs in international traffic prescribed by the Vienna Convention on Road Traffic (Vienna 1968).

— a check of the design characteristics ([1]);

— an examination of the internal and external conditions;

— a hydraulic pressure test ([2]) at the test pressure indicated on the plate prescribed in 6.8.2.5.1; and

— a check of satisfactory operation of the equipment.

The hydraulic pressure test shall be carried out before the installation of such thermal equipment as may be necessary. If the shells and their equipment are tested separately, they shall be jointly subjected to a leakproofness test in accordance with 6.8.2.4.3.

The leakproofness test shall be carried out separately on each compartment of compartmented shells.

6.8.2.4.2. Shells and their equipment shall undergo periodic inspections at fixed intervals. The periodic inspections shall include: an external and internal examination and, as a general rule, a hydraulic pressure test ([2]). Sheathing for thermal or other insulation shall be removed only to the extent required for reliable appraisal of the characteristics of the shell.

In the case of shells intended for the carriage of powdery or granular substances, and with the agreement of the expert approved by the competent authority, the periodic hydraulic pressure tests may be omitted and replaced by leakproofness tests in accordance with 6.8.2.4.3.

The maximum interval for periodic inspections shall be:

eight years.	five years.

6.8.2.4.3. In addition, a leakproofness test of the shell with its equipment and a check of the satisfactory operation of all the equipment shall be carried out

at least every four years.	at least every two and a half years.

In this test, the shell shall be subjected to an effective internal pressure equal to the maximum working pressure but not less than 20 kPa (0,2 bar) (gauge pressure).

For shells equipped with venting systems and a safety device to prevent the contents spilling out if the shell overturns, the pressure for the leakproofness test shall be equal to the static pressure of the filling substance.

The leakproofness test shall be carried out separately on each compartment of compartmented shells.

6.8.2.4.4. When the safety of the tank or of its equipment may have been impaired as a result of repairs, alterations or accident, an exceptional check shall be carried out.

6.8.2.4.5. The tests, inspections and checks in accordance with 6.8.2.4.1 to 6.8.2.4.4 shall be carried out by the expert approved by the competent authority. Certificates shall be issued showing the results of these operations. These certificates shall refer to the list of the substances permitted for carriage in this tank or to the tank code in accordance with 6.8.2.3.

6.8.2.5. Marking

6.8.2.5.1. Every tank shall be fitted with a corrosion-resistant metal plate permanently attached to the tank in a place readily accessible for inspection. The following particulars at least shall be marked on the plate by stamping or by any other similar method. These particulars may be engraved directly on the walls of the shell itself, if the walls are so reinforced that the strength of the shell is not impaired:

([1]) The check of the design characteristics shall also include, for shells requiring a test pressure of 1 MPa (10 bar) or higher, the taking of weld test-pieces (work samples) in accordance with 6.8.2.1.23 and the tests prescribed in 6.8.5.

([2]) In special cases and with the agreement of the expert approved by the competent authority, the hydraulic pressure test may be replaced by a test using another liquid or a gas, where such an operation does not present any danger.

— approval number;

— manufacturer's name or mark;

— manufacturer's serial number;

— year of manufacture;

— test pressure (gauge pressure) ([1]);

— capacity — in the case of multiple-element shells, the capacity of each element10 ([1]);

— design temperature (only if above + 50 °C of or below – 20 °C) ([1]);

— date (month and year) of initial test and most recent periodic test in accordance with 6.8.2.4.1 and 6.8.2.4.2;

— stamp of the expert who carried out the tests;

— material of the shell and reference to materials standards, if available and, where appropriate, the protective lining.

— test pressure on the shell as a whole and test pressure by compartment in MPa or bar (gauge pressure) where the pressure by compartment is less than the pressure on the shell.

In addition, the maximum working pressure ([1]) allowed shall be inscribed on pressure-filled or pressure-discharge tanks.

6.8.2.5.2. The following particulars shall be inscribed on both sides of the tank wagon itself or on a plate:

— name of operator;

— capacity ([1]);

— unladen mass of tank wagon ([1]);

— load limits according to the characteristics of the wagon and the nature of the lines used;

— proper name of substance carried ([2]);

— tank code according to 4.3.4.1.1;

— date (month, year) of the next inspection in accordance with 6.8.2.4.2 and 6.8.2.4.3 or with the TT special provisions of 6.8.4 for the substance(s) accepted for carriage.

The following particulars shall be inscribed either on the tank-container itself or on a plate:

— names of owner and of operator;

— capacity of the shell ([1]);

— unladen (tare) mass ([1]);

— maximum permissible laden mass ([1]);

— proper name of substance carried ([2]);

— tank code according to 4.3.4.1.1.

6.8.2.6. Requirements for tanks which are designed, constructed and tested according to standards

(Reserved)

([1]) Add the units of measurement after the numerical values.
([2]) A collective designation, covering substances of a similar kind and equally compatible with the characteristics of the shell, may be given instead of the name.

6.8.2.7. Requirements for tanks which are not designed, constructed and tested according to standards

Tanks which are not designed, constructed and tested according to the standards listed in 6.8.2.6 shall be designed, constructed and tested in accordance with the requirements of a technical code recognised by the competent authority. However, the minimum requirements of 6.8.2 shall be met.

6.8.3. *Special requirements applicable to Class 2*

6.8.3.1. Construction of shells

6.8.3.1.1. Shells intended for the carriage of compressed or liquefied gases or gases dissolved under pressure shall be made of steel. In the case of weldless shells, by derogation from 6.8.2.1.12 a minimum elongation at fracture of 14 % and also a stress σ lower than or equal to limits hereafter given according to the material may be accepted:

(a) When the ratio Re/Rm (of the minimum guaranteed characteristics after heat treatment) is higher than 0,66 without exceeding 0.85:

$\sigma \leq 0{,}75$ Re;

(b) When the ratio Re/Rm (of the minimum guaranteed characteristics after heat treatment) is higher than 0.85:

$\sigma \leq 0{,}5$ Rm.

6.8.3.1.2. The requirements of 6.8.5 apply to the materials and construction of welded shells.

6.8.3.1.3.	For double-walled shells, the wall thickness of the inner receptacle may, not — withstanding the requirements of 6.8.2.1.18, be 3 mm if a metal is used which has good low-temperature performance corresponding to a minimum tensile strength Rm = 490 N/mm^2 and a minimum coefficient of elongation A = 30 %. If other metals are used, an equivalent minimum wall thickness shall be maintained; this thickness is to be calculated according to the formula in footnote ([2]) to 6.8.2.1.18, where Rm_0 = 490 N/mm^2 and A_0 = 30 %. The outer shell shall in this case have a minimum wall thickness of 6 mm where mild steel is concerned. If other materials are used, an equivalent minimum wall thickness shall be maintained, which shall be calculated according to the formula given in 6.8.2.1.18.	(Reserved)

Construction of battery-wagons and MEGCs

6.8.3.1.4. Cylinders, tubes, pressure drums and bundles of cylinders, as elements of a battery-wagon or MEGC, shall be constructed in accordance with Chapter 6.2.

NOTE 1: Bundles of cylinders which are not elements of a battery-wagon or of a MEGC shall be subject to the requirements of Chapter 6.2.

NOTE 2: Tanks as elements of battery-wagons and MEGCs shall be constructed in accordance with 6.8.2.1 and 6.8.3.1.

NOTE 3: Demountable elements ([1]) are not to be considered elements of battery-wagons or MEGCs.

6.8.3.1.5. Elements and their fastenings shall be capable of absorbing under the maximum permissible load the forces defined in 6.8.2.1.2. Under each force the stress at the most severely stressed point of the element and its fastenings shall not exceed the value defined in 6.2.3.1 for cylinders, tubes, pressure drums and bundles of cylinders and for tanks the value of defined in 6.8.2.1.16.

([1]) For the definition of demountable tanks, see 1.2.1.

6.8.3.2. Items of equipment

6.8.3.2.1. The discharge pipes of tanks shall be capable of being closed by blank flanges or some other equally reliable device. For tanks intended for the carriage of refrigerated liquefied gases, these blank flanges or other equally reliable devices may be fitted with pressurerelease openings of a maximum diameter of 1,5 mm.

6.8.3.2.2. Shells intended for the carriage of liquefied gases may be provided with, in addition to the openings prescribed in 6.8.2.2.2 and 6.8.2.2.4, openings for the fitting of gauges, thermometers and with bleed holes, as required for their operation and safety.

6.8.3.2.3. Filling and discharge openings of tanks

| with a capacity greater than 1 m^3

intended for the carriage of liquefied flammable and/or toxic gases shall be equipped with an instant-closing internal safety device which closes automatically in the event of an unintended movement of the shell or of fire. It shall also be possible to operate the closing device by remote control.

The device which keeps the internal closure open, e.g. a rail hook, is not a component of the wagon. |

6.8.3.2.4. All openings, other than those accommodating safety valves and closed bleed holes, of tanks intended for the carriage of liquefied flammable and/or toxic gases shall, if their nominal diameter is more than 1,5 mm, be equipped with an internal shut-off device.

6.8.3.2.5. Notwithstanding the requirements of 6.8.2.2.2, 6.8.3.2.3 and 6.8.3.2.4, tanks intended for the carriage of refrigerated liquefied gases may be equipped with external devices in place of internal devices if the external devices afford protection against external damage at least equivalent to that afforded by the wall of the shell.

6.8.3.2.6. If the tanks are equipped with gauges in direct contact with the substance carried, the gauges shall not be made of a transparent material. If there are thermometers, they shall not project directly into the gas or liquid through the shell.

6.8.3.2.7. Filling and discharge openings situated in the upper part of tanks shall be equipped with, in addition to what is prescribed in 6.8.3.2.3, a second, external, closing device. This device shall be capable of being closed by a blank flange or some other equally reliable device.

6.8.3.2.8. Safety valves shall meet the requirements of 6.8.3.2.9 to 6.8.3.2.12 below:

6.8.3.2.9. Tanks intended for the carriage of compressed or liquefied gases or gases dissolved under pressure, may be fitted with not more than two safety valves whose aggregate clear crosssectional area of passage at the seating or seatings shall be not less than 20 cm^2 per 30 m^3 or part thereof of the shell's capacity. These valves shall be capable of opening automatically under a pressure between 0,9 and 1,0 times the test pressure of the tank to which they are fitted. They shall be of such a type as to resist dynamic stresses, including liquid surge. The use of dead weight or counter weight valves is prohibited.

6.8.3.2.10. Where tanks are intended for carriage by sea, the requirements of 6.8.3.2.9 shall not prohibit the fitting of safety valves conforming to the IMDG Code.

6.8.3.2.11. Tanks intended for the carriage of refrigerated liquefied gases shall be equipped with two independent safety valves, each so designed as to allow the gases formed by evaporation during normal operation to escape from the tank in such a way that the pressure does not at any time exceed by more than 10 % the working pressure indicated on the tank.

One of the two safety valves may be replaced by a bursting disc which shall be such as to burst at the test pressure.

In the event of loss of the vacuum in a double-walled tank, or of destruction of 20 % of the insulation of a single-walled tank, the safety valve and the bursting disc shall permit an outflow such that the pressure in the shell cannot exceed the test pressure.

6.8.3.2.12. The safety valves of tanks intended for the carriage of refrigerated liquefied gases shall be capable of opening at the working pressure indicated on the tank. They shall be so designed as to function faultlessly even at their lowest working temperature. The reliability of their operation at that temperature shall be established and checked either by testing each valve or by testing a specimen valve of each design-type.

6.8.3.2.13. The valves of demountable tanks that can be rolled shall be provided with protective caps.

Thermal insulation

6.8.3.2.14. If tanks intended for the carriage of liquefied gases are equipped with thermal insulation, such insulation shall consist of either:

— a sun shield covering not less than the upper third but not more than the upper half of the tank surface and separated from the shell by an air space at least 4 cm across; or

— a complete cladding, of adequate thickness, of insulating materials.

6.8.3.2.15. Tanks intended for the carriage of refrigerated liquefied gases shall be thermally insulated. Thermal insulation shall be ensured by means of a continuous sheathing. If the space between the shell and the sheathing is under vacuum (vacuum insulation), the protective sheathing shall be so designed as to withstand without deformation an external pressure of at least 100 kPa (1 bar) (gauge pressure). By derogation from the definition of 'calculation pressure' in 1.2.1, external and internal reinforcing devices may be taken into account in the calculations. If the sheathing is so closed as to be gas-tight, a device shall be provided to prevent any dangerous pressure from developing in the insulating layer in the event of inadequate gas-tightness of the shell or of its items of equipment. The device shall prevent the infiltration of moisture into the heat-insulating sheath.

6.8.3.2.16. Tanks intended for the carriage of liquefied gases having a boiling point below – 182 °C at atmospheric pressure shall not include any combustible material either in the thermal insulation or in the means of attachment of the tank-container or tank.

The means of attachment for vacuum insulated tanks may, with the approval of the competent authority, contain plastics substances between the shell and the sheathing.

6.8.3.2.17. By derogation from the requirements of 6.8.2.2.4 shells intended for the carriage of refrigerated liquefied gases need not have an inspection opening.

Items of equipment for battery-wagons and MEGCs

6.8.3.2.18. The manifold shall be designed for service in a temperature range of – 20 °C to + 50 °C.

The manifold shall be designed, constructed and installed so as to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping shall be of suitable metallic material. Welded pipe joints shall be used wherever possible.

Joints in copper tubing shall be brazed or have an equally strong metal union. The melting point of brazing materials shall be no lower than 525 °C. The joints shall not decrease the strength of tubing as may happen when cutting threads.

6.8.3.2.19. Except for UN 1001 acetylene, the maximum permissible stress σ of the manifolding arrangement at the test pressure of the receptacles shall not exceed 75 % of the guaranteed yield stress of the material. The necessary wall thickness of the manifolding arrangement for UN 1001 acetylene shall be calculated according to an approved code of practice.

NOTE: For the yield stress, see 6.8.2.1.11.

The basic requirements of this paragraph shall be deemed to have been complied with if the following standards are applied: (reserved).

6.8.3.2.20. By derogation from the requirements of 6.8.3.2.3, 6.8.3.2.4 and 6.8.3.2.7, for cylinders, tubes, pressure drums and bundles of cylinders (frames) forming a battery-wagon or MEGC, the required closing devices may be provided for within the manifolding arrangement.

6.8.3.2.21. If one of the elements is equipped with a safety valve and shut-off devices are provided between the elements, every element shall be so equipped.

6.8.3.2.22. The filling and discharge devices may be affixed to a manifold.

6.8.3.2.23. Each element, including each individual cylinder of a bundle, intended for the carriage of toxic gases, shall be capable of being isolated by a shut-off valve.

6.8.3.2.24. If battery-wagons or MEGCs intended for the carriage of toxic gases are fitted with safety valves, a bursting disc shall be placed before the valve. The arrangement of the bursting disc and safety valve shall be such as to satisfy the competent authority.

6.8.3.2.25. When battery-wagons or MEGCs are intended for carriage by sea, the requirements of 6.8.3.2.24 shall not prohibit the fitting of safety valves conforming to the IMDG Code.

6.8.3.2.26. Receptacles which are elements of a battery-wagon or MEGC intended for the carriage of flammable gases shall be combined in groups of not more than 5 000 litres which are capable of being isolated by a shut-off valve.

Each element of a battery-wagon or MEGC intended for the carriage of flammable gases, when consisting of tanks conforming to this Chapter, shall be capable of being isolated by a shut-off valve.

6.8.3.3. Type approval

No special requirements.

6.8.3.4. Tests

6.8.3.4.1. The materials of every welded shell with the exception of cylinders, tubes, pressure drums and cylinders as part of bundles of cylinders which are elements of a battery-wagon or of a MEGC shall be tested according to the method described in 6.8.5.

6.8.3.4.2. The basic requirements for the test pressure are given in 4.3.3.2.1 to 4.3.3.2.4 and the minimum test pressures are given in the table of gases and gas mixtures in 4.3.3.2.5.

6.8.3.4.3. The first hydraulic pressure test shall be carried out before thermal insulation is placed in position.

6.8.3.4.4. The capacity of each shell intended for the carriage of compressed gases filled by mass, liquefied gases or gases dissolved under pressure shall be determined, under the supervision of an expert approved by the competent authority, by weighing or volumetric measurement of the quantity of water which fills the shell; the measurement of shell capacity shall be accurate to within 1 %. Determination by a calculation based on the dimensions of the shell is not permitted. The maximum filling masses allowed in accordance with Packing Instruction P200 or P203 in 4.1.4.1 as well as 4.3.3.2.2 and 4.3.3.2.3 shall be prescribed by an approved expert.

6.8.3.4.5. Checking of the welds shall be carried out in accordance with the λ requirements of 6.8.2.1.23.

6.8.3.4.6. By derogation from the requirements of 6.8.2.4, the periodic tests, including the hydraulic pressure test, shall take place:

(a) Every 4 years	Every 2½ years

in the case of tanks intended for the carriage of UN 1008 boron trifluoride, UN 1017 chlorine, UN 1048 hydrogen bromide, anhydrous, UN 1050 hydrogen chloride, anhydrous, UN 1053 hydrogen sulphide, UN 1067 dinitrogen tetroxide (nitrogen dioxide), UN 1076 phosgene or UN 1079 sulphur dioxide;

(b) After 8 years of service and thereafter every 12 years in the case of tanks intended for the carriage of refrigerated liquefied gases;

A leakproofness check shall be performed by an approved expert 6 years after each periodic test.	A leakproofness test may be performed, at the request of the competent authority, between any two successive tests.

6.8.3.4.7. In the case of vacuum-insulated tanks, the hydraulic-pressure test and the check of the internal condition may, with the consent of the approved expert, be replaced by a leakproofness test and measurement of the vacuum.

6.8.3.4.8. If, at the time of periodic inspections, openings have been made in shells intended for the carriage of refrigerated liquefied gases, the method by which they are hermetically closed before the shells are returned to service shall be approved by the approved expert and shall ensure the integrity of the shell.

6.8.3.4.9. Leakproofness tests of tanks intended for the carriage of compressed, liquefied gases or gases dissolved under pressure shall be performed at a pressure of not less than 0,4 MPa (4 bar) and not more than 0,8 MPa (8 bar) (gauge pressure).

Tests for battery-wagons and MEGCs

6.8.3.4.10. The elements and items of equipment of each battery-wagon or MEGC shall be tested either together or separately before being put into service for the first time (initial test). Thereafter battery-wagons or MEGCs the elements of which are receptacles shall be inspected at not more than five-year intervals. Battery-wagons and MEGCs the elements of which are tanks shall thereafter be inspected at intervals according to 6.8.3.4.6. An exceptional test shall be performed regardless of the last periodic test when necessary according to 6.8.3.4.14.

6.8.3.4.11. The initial inspection shall include:

— a check of conformity to the approved prototype;

— a check of the design characteristics;

— an examination of the internal and external conditions;

— a hydraulic pressure test ([1]) at the test pressure indicated on the plate prescribed in 6.8.3.5.10;

— a leakproofness test at the maximum allowable working pressure; and

— a check of satisfactory operation of the equipment.

When the elements and their fittings have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test.

6.8.3.4.12. Cylinders, tubes and pressure drums and cylinders as part of bundles of cylinders shall be tested according to Packing Instruction P200 or P203 (see 4.1.4.1).

The test pressure of the manifold of the battery-wagon or MEGC shall be the same as that of the elements of the battery-wagon or MEGC. The pressure test of the manifold may be performed as a hydraulic test or by using another liquid or gas with the agreement of the competent authority or its authorised body. By derogation from this requirement, the test pressure for the manifold of battery-wagons or MEGCs shall not be less than 300 bar for UN 1001 acetylene, dissolved.

6.8.3.4.13. The periodic inspection shall include a leakproofness test at the maximum working pressure and an external examination of the structure, the elements and the service equipment without disassembling. The elements and the piping shall be tested at the periodicity defined in packing instruction P200 of 4.1.4.1 and in accordance with the requirements of 6.2.1.5. When the elements and equipment have been pressure-tested separately, they shall be subjected together after assembly to a leakproofness test.

6.8.3.4.14. An exceptional test is necessary when the battery-wagon or MEGC shows evidence of damaged or corroded areas, or leakage, or any other conditions, that indicate a deficiency that could affect the integrity of the battery-wagon or MEGC. The extent of the exceptional test and, if deemed necessary, the disassembling of elements shall depend on the amount of damage or deterioration of the battery-wagon or MEGC. It shall include at least the inspection required under 6.8.3.4.15.

6.8.3.4.15. The examinations shall ensure that:

(a) the elements are inspected externally for pitting, corrosion, or abrasions, dents, distortions, defects in welds or any other conditions, including leakage, that might render the battery-wagons or MEGCs unsafe for transport;

(b) the piping, valves, and gaskets are inspected for corroded areas, defects, and other conditions, including leakage, that might render battery-wagons or MEGCs unsafe for filling, discharge or transport;

(c) missing or loose bolts or nuts on any flanged connection or blank flange are replaced or tightened;

([1]) In special cases and with the agreement of the expert approved by the competent authority, the hydraulic pressure test may be replaced by a test using another liquid or gas, where such an operation does not present any danger.

(d) all emergency devices and valves are free from corrosion, distortion and any damage or defect that could prevent their normal operation. Remote closure devices and selfclosing stop-valves shall be operated to demonstrate proper operation;

(e) required markings on the battery-wagons or MEGCs are legible and in accordance with the applicable requirements; and

(f) any framework, supports and arrangements for lifting the battery-wagons or MEGCs are in satisfactory condition.

6.8.3.4.16. The tests in accordance with 6.8.3.4.10 to 6.8.3.4.15 shall be carried out by the expert approved by the competent authority. Certificates shall be issued showing the results of these operations.

These certificates shall refer to the list of the substances permitted for carriage in this battery-wagon or MEGC in accordance with 6.8.2.3.1.

6.8.3.5. Marking

6.8.3.5.1. The following additional particulars shall be marked by stamping or by any other similar method on the plate prescribed in 6.8.2.5.1, or directly on the walls of the shell itself if the walls are so reinforced that the strength of the tank is not impaired.

6.8.3.5.2. On tanks intended for the carriage of only one substance:

— the proper shipping name of the gas and, in addition for gases classified under an n.o.s. entry, the technical name ([1]).

This indication shall be supplemented:

— in the case of tanks intended for the carriage of compressed gases filled by volume (pressure), by an indication of the maximum filling pressure at 15 °C permitted for the tank; and

— in the case of tanks intended for the carriage of compressed gases filled by mass, and of liquefied gases, refrigerated liquefied gases or gases dissolved under pressure by an indication of the maximum permissible load mass in kg and of the filling temperature if below – 20 °C.

6.8.3.5.3. On multipurpose tanks:

— the proper shipping names of the gases and, in addition for gases classified under an n.o.s. entry, the technical name of the gases ([1]) for whose carriage the tank is approved.

These particulars shall be supplemented by an indication of the maximum permissible load mass in kg for each gas.

6.8.3.5.4. On tanks intended for the carriage of refrigerated liquefied gases:

— the maximum working pressure allowed.

6.8.3.5.5. On tanks equipped with thermal insulation:

— the inscription 'thermally insulated' or 'thermally insulated by vacuum'.

([1]) Instead of the name of the n.o.s. entry supplemented by the technical name, the use of one of the following names is permitted:
— for 1078 refrigerant gas, n.o.s.: mixture F1, mixture F2, mixture F3;
— for 1060 methyl acetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;
— for 1965 hydrocarbon gas mixture, liquefied, n.o.s.: mixture A, mixture A01, mixture A02, mixture A0, mixture A1, mixture B1, mixture B2, mixture B, mixture C. The names customary in the trade and mentioned in 2.2.2.3, classification code 2F, UN 1965, Note 1, may be used only as a complement.

6.8.3.5.6. In addition to the particulars prescribed in 6.8.2.5.2, the following shall be inscribed on

both sides of the tank wagon or on plates	the tank-container itself or on a plate:

(a) — the tank code according to the certificate (see 6.8.2.3.1) with the actual test pressure of the tank;

— the inscription: ‘minimum filling temperature allowed: …’,

(b) where the tank is intended for the carriage of one substance only:

— the proper shipping name of the gas and, in addition for gases classified under an n.o.s. entry, the technical name [1];

	— for compressed gases which are filled by mass, and for liquefied gases, refrigerated liquefied gases or gases dissolved under pressure, the maximum permissible load mass in kg;

(c) where the tank is a multipurpose tank:

— the proper shipping name of the gas and, for gases classified under an n.o.s. entry, the technical name [1] of all gases to whose carriage the tank is assigned

	with an indication of the maximum permissible load mass in kg for each of them

(d) where the shell is equipped with thermal insulation:

— the inscription ‘thermally insulated’ or ‘thermally insulated by vacuum’, in an official language of the country of registration and also, if that language is not French, German, Italian or English, in French, German, Italian or English, unless the international tariffs or any agreements concluded between the railways provide otherwise.

6.8.3.5.7.	The load limits in accordance with 6.8.2.5.2 — for compressed gases filled by mass, — for liquefied or refrigerated, liquefied gases and — for gases dissolved under pressure, shall be determined in the light of the maximum permissible load mass of the shell, depending on the substance carried; in the case of multi-purpose shells, the name in full of the particular gas being carried shall be stated together with the load limit on the same moveable panel.	(Reserved)
6.8.3.5.8.	The panels on wagons carrying demountable tanks as referred to in 6.8.3.2.13 need not bear the particulars prescribed in 6.8.2.5.2 and 6.8.3.5.6.	(Reserved)
6.8.3.5.9.	(Reserved)	

[1] Instead of the name of the n.o.s. entry supplemented by the technical name, the use of one of the following names is permitted:
— for 1078 refrigerant gas, n.o.s.: mixture F1, mixture F2, mixture F3;
— for 1060 methyl acetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;
— for 1965 hydrocarbon gas mixture, liquefied, n.o.s.: mixture A, mixture A01, mixture A02, mixture A0, mixture A1, mixture B1, mixture B2, mixture B, mixture C. The names customary in the trade and mentioned in 2.2.2.3, classification code 2F, UN 1965, Note 1, may be used only as a complement.

Marking of battery-wagons and MEGCs

6.8.3.5.10. Every battery-wagon and every MEGC shall be fitted with a corrosion-resistant metal plate permanently attached in a place readily accessible for inspection. The following particulars at least shall be marked on the plate by stamping or by any other similar method:

— approval number;

— manufacturer's name or mark;

— manufacturer's serial number;

— year of manufacture;

— test pressure (gauge pressure) ([1]);

— design temperature (only if above + 50 °C or below – 20 °C) ([1]);

— date (month and year) of initial test and most recent periodic test in accordance with 6.8.3.4.10 to 6.8.3.4.13;

— stamp of the expert who carried out the tests.

6.8.3.5.11.	The following particulars shall be inscribed on both sides of the battery-wagon on a plate: — name of operator; — number of elements; — total capacity of the elements ([1]); — load limits according to the characteristics of the wagon and the nature of the lines used; tank code according to the certificate (see 6.8.2.3.1) with the relevant test pressure for the battery wagon/MEGC; — proper shipping name and, in addition, for gases covered by an n.o.s. entry, the technical name ([2]) of the gas the transport of which the battery wagon is used; — the date (month, year) of the next test in accordance with 6.8.2.4.3 and 6.8.3.4.13	The following particulars shall be inscribed either on the MEGC itself or on a plate: — names of owner and of operator; — number of elements; — total capacity of the elements ([1]); — maximum permissible laden mass ([1]); — tank code according to the certificate (see 6.8.2.3.1) with the relevant test pressure for the battery wagon/MEGC; — proper shipping name and, in addition, for gases covered by an n.o.s. entry, the technical name ([2]) of the gas the transport of which the MEGC is used; and for MEGCs filled by mass: — tare ([1]).

6.8.3.5.12. The frame of a battery-wagon or MEGC shall bear near the filling point a plate specifying:

— the maximum filling pressure ([1]) at 15 °C allowed for elements intended for compressed gases;

— the proper shipping name of the gas in accordance with Chapter 3.2 and, in addition for gases classified under an n.o.s. entry, the technical name ([2])

and, in addition, in the case of liquefied gases:

— the permissible maximum load per element ([1]).

([1]) Add the units of measurement after the numerical values.
([2]) Instead of the name of the n.o.s. entry supplemented by the technical name, the use of one of the following names is permitted:
— for 1078 refrigerant gas, n.o.s.: mixture F1, mixture F2, mixture F3;
— for 1060 methyl acetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;
— for 1965 hydrocarbon gas mixture, liquefied, n.o.s.: mixture A, mixture A01, mixture A02, mixture A0, mixture A1, mixture B1, mixture B2, mixture B, mixture C. The names customary in the trade and mentioned in 2.2.2.3, classification code 2F, UN 1965, Note 1, may be used only as a complement.

6.8.3.5.13. Cylinders, tubes and pressure drums, and cylinders as part of bundles of cylinders, shall be marked according to 6.2.1.7. These receptacles need not be labelled individually with the danger labels as required in Chapter 5.2.

Battery-wagons and MEGCs shall bear placards and orange coloured plates according to Chapter 5.3.

6.8.3.6. Requirements for battery-wagons and MEGCs which are designed, constructed and tested according to standards

(Reserved)

6.8.3.7. Requirements for battery-wagons and MEGCs which are not designed, constructed and tested according to standards

Battery-wagons and MEGCs which are not designed, constructed and tested in accordance with the standards set out in 6.8.3.6 shall be designed, constructed and tested in accordance with the requirements of a technical code recognized by the competent authority. They shall, however, comply with the minimum requirements of 6.8.3.

6.8.4. *Special provisions*

NOTE 1: For liquids having a flash-point of not more than 61 °C and for flammable gases, see also 6.8.2.1.26, 6.8.2.1.27 and 6.8.2.2.9.

NOTE 2: For requirements for tanks intended for the carriage of refrigerated liquefied gases or for tanks subjected to a pressure test of not less than 1 MPa (10 bar) see 6.8.5.

When they are shown under an entry in column (13) of Table A of Chapter 3.2, the following special provisions apply:

(a) *Construction (TC)*

TC1 The requirements of 6.8.5 are applicable to the materials and construction of these shells.

TC2 Shells, and their items of equipment, shall be made of aluminium not less than 99,5 % pure or of suitable steel not liable to cause hydrogen peroxide to decompose. Where shells are made of aluminium not less than 99,5 % pure, the wall thickness need not exceed 15 mm, even where calculation in accordance with 6.8.2.1.17 gives a higher value.

TC3 The shells shall be made of austenitic steel.

TC4 Shells shall be provided with an enamel or equivalent protective lining if the material of the shell is attacked by UN 3250 chloroacetic acid.

TC5 Shells shall be provided with a lead lining not less than 5 mm thick or an equivalent lining.

TC6 Where the use of aluminium is necessary for tanks, such tanks shall be made of aluminium not less than 99,5 % pure; the wall thickness need not exceed 15 mm even where calculation in accordance with 6.8.2.1.17 gives a higher value.

TC7 (Reserved)

(b) *Items of equipment (TE)*

TE1 If tanks, battery-wagons or MEGCs are fitted with safety valves, a bursting disc shall be placed before the valves. The arrangement of the bursting disc and safety valve shall be such as to satisfy the competent authority. A pressure gauge or another suitable indicator shall be provided in the space between the bursting disc and the safety valve, to enable detection of any rupture, perforation or leakage of the disc which may disrupt the action of the safety valve.

TE2 The bottom discharge system of tanks may consist of an external pipe with a stop-valve, if it is constructed in a metallic material liable to deformation.

TE3 Tanks shall in addition meet the following requirements. The heating device shall not penetrate into, but shall be exterior to the shell. However, a pipe used for extracting the phosphorus may be equipped with a heating jacket. The device heating the jacket shall be so regulated as to prevent the temperature of the phosphorus from exceeding the filling temperature of the shell. Other piping shall enter the shell in its upper part; openings shall be situated above the highest permissible level of the phosphorus and be capable of being completely enclosed under lockable caps. The tank shall be equipped with a gauging system for verifying the level of the phosphorus and, if water is used as a protective agent, with a fixed gauge mark showing the highest permissible level of the water.

TE4 Shells shall be equipped with thermal insulation made of materials which are not readily flammable.

TE5 If shells are equipped with thermal insulation, such insulation shall be made of materials which are not readily flammable.

TE6 Tanks may be equipped with valves opening automatically inwards or outwards under the effect of a difference of pressure of between 20 kPa and 30 kPa (0,2 bar and 0,3 bar).

TE7 The shell-discharge system shall be equipped with two mutually independent shutoff devices mounted in series, the first taking the form of a quick-closing internal stop-valve of an approved type and the second that of an external stop-valve, one at each end of the discharge pipe. A blank flange, or another device providing the same measure of security, shall also be fitted at the outlet of each external stopvalve. The internal stop-valve shall be such that if the pipe is wrenched off the stop-valve will remain integral with the shell and in the closed position.

TE8 The connections to the external pipe-sockets of tanks shall be made of materials not liable to cause decomposition of hydrogen peroxide.

TE9 Tanks shall be fitted in their upper part with a shut-off device preventing any build-up of excess pressure inside the shell due to the decomposition of the substances carried, any leakage of liquid, and any entry of foreign matter into the shell.

TE10 The shut-off devices of tanks shall be so designed as to preclude obstruction of the devices by solidified ammonium nitrate during carriage. Where tanks are sheathed in thermally-insulating material, the material shall be of an inorganic nature and entirely free from combustible matter.

TE11 Shells and their service equipment shall be so designed as to prevent the entry of foreign matter, leakage of liquid or any building up of dangerous excess pressure inside the shell due to the decomposition of the substances carried.

TE12 Tanks shall be equipped with thermal insulation complying with the requirements of 6.8.3.2.14. The sun shield and any part of the tank not covered by it, or the outer sheathing of a complete lagging, shall be painted white or finished in bright metal. The paint shall be cleaned before each transport journey and renewed in case of yellowing or deterioration. The thermal insulation shall be free from combustible matter. Tanks shall be fitted with temperature sensing devices.

Tanks shall be fitted with safety valves and emergency pressure-relief devices.

Vacuum-relief devices may also be used. Emergency pressure-relief devices shall operate at pressures determined according to both the properties of the organic peroxide and the construction characteristics of the tank. Fusible elements shall not be permitted in the body of the shell.

Tanks shall be fitted with spring-loaded safety valves to prevent significant pressure build-up within the shell of the decomposition products and vapours released at a temperature of 50 °C. The capacity and start-to-discharge pressure of the safety-valve(s) shall be based on the results of the tests specified in special provision TA2. The start-to-discharge pressure shall however in no case be such that liquid could escape from the valve(s) if the tank were overturned.

The emergency-relief devices may be of the spring-loaded or frangible types designed to vent all the decomposition products and vapours evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire-engulfment as calculated by the following formula:

$$q = 70961 \times F \times A^{0.82}$$

where:

q = heat absorption [W]

A = wetted area [m^2]

F = insulation factor [-]

F = 1 for non-insulated tanks, or

$$F = \frac{U(923 - T_{PO})}{47032} \text{ for insulated tanks}$$

where:

K = heat conductivity of insulation layer [Wm^{-1}K^{-1}]

L = thickness of insulation layer [m]

U = K/L = heat transfer coefficient of the insulation [Wm^{-2}K^{-1}]

T_{PO} = temperature of peroxide at relieving conditions [K]

The start-to-discharge pressure of the emergency-relief device(s) shall be higher than that specified above and based on the results of the tests referred to in special provision TA2. The emergency-relief devices shall be dimensioned in such a way that the maximum pressure in the tank never exceeds the test pressure of the tank.

NOTE: An example of a method to determine the size of emergency-relief devices is given in Appendix 5 of the Manual of Tests and Criteria.

For completely insulated tanks, the capacity and setting of the emergency-relief device(s) shall be determined assuming a loss of insulation from 1 % of the surface area.

Vacuum-relief devices and spring-loaded safety valves of tanks shall be provided with flame arresters unless the substances to be carried and their decomposition products are non-combustible. Due attention shall be paid to the reduction of the relief capacity caused by the flame arrester.

TE13 Tanks shall be thermally insulated and fitted with a heating device on the outside.

TE14 Tanks shall be equipped with thermal insulation. They may also be equipped with pressure-release devices opening automatically inwards or outwards under the effect of a difference of pressure of between 20 kPa and 30 kPa (0,2 bar and 0,3 bar). The thermal insulation directly in contact with the shell shall have an ignition temperature at least 50 °C higher than the maximum temperature for which the tank was designed.

TE15 Shells shall also be considered as being hermetically closed if they are fitted with a controlled, spring-loaded ventilation (auto-vent) valve which opens at a negative pressure in excess of 0,4 bar.	(Reserved)
TE16 No part of the tank wagon may be of wood, unless this is protected by a suitable coating.	(Reserved)
TE17 For demountable tanks ([1]), the following requirements apply: (a) they shall be so fixed on the underframe of the wagon that they cannot move; (b) they shall not be interconnected by a manifold; (c) if they can be rolled, the valves shall be provided with protective caps.	(Reserved)

TE18 (Reserved)

TE19 (Reserved)

TE 20 Irrespective of the other tank codes allowed under the tank hierarchy in the rationalised approach in 4.3.4.1.2, tanks shall always be fitted with a safety valve.

(c) *Type approval (TA)*

TA1 Tanks shall not be approved for the carriage of organic substances.

TA2 This substance may only be carried in tank wagons or tank-containers under the conditions laid down by the competent authority of the country of origin, if, on the basis of the tests mentioned below, the competent authority is satisfied that such a transport operation can be carried out safely. If the country of origin is not a Contracting State, these conditions shall be recognized by the competent authority of the first Contracting State reached by the consignment.

For the type approval tests shall be undertaken:

— to prove the compatibility of all materials normally in contact with the substance during carriage;

— to provide data to facilitate the design of the emergency pressure-relief devices and safety valves taking into account the design characteristics of the tank; and

— to establish any special requirements necessary for the safe carriage of the substance.

The test results shall be included in the report for the type approval.

([1]) For the definition of demountable tanks, see 1.2.1.

(d) *Tests (TT)*

NOTE: Tanks shall be subjected to the initial and periodic hydraulic pressure tests at a pressure depending on their calculation pressure at least equal to the pressure indicated below:

Calculation pressure (bar)	Test pressure (bar)
G [1]	G [1]
1,5	1,5
2,65	2,65
4	4
10	4
15	4
21	10 (4 [2])

[1] G = minimum calculation pressure according to the general requirements of 6.8.2.1.14 (see 4.3.4.1).
[2] Minimum test pressure for UN 1744 bromine or UN 1744 bromine solution.

TT1 Tanks of pure aluminium need be subjected to the initial and periodic hydraulic pressure tests at a pressure of only 250 kPa (2,5 bar) (gauge pressure).

TT2 The condition of the lining of shells shall be inspected every year by an expert approved by the competent authority, who shall inspect the inside of the shell.

TT3 (Reserved)	By derogation from the requirements of 6.8.2.4.2, periodic inspections shall take place at least every eight years and shall include a thickness check using suitable instruments. For such tanks, the leakproofness test and check for which provision is made in 6.8.2.4.3 shall be carried out at least every four years.

TT4 Shells shall be inspected every

4 years	2½ years

for resistance to corrosion, by means of suitable instruments (e.g. by ultrasound).

TT5 The hydraulic pressure tests shall take place at least every

4 years	2½ years
TT6 The periodic tests shall be carried out at least every 4 years, including the hydraulic pressure test.	(Reserved)

TT7 By derogation from 6.8.2.4.2, the periodic internal inspection may be replaced by a programme approved by the competent authority.

(e) *Marking (TM)*

NOTE: These particulars shall be in an official language of the country of approval, and also, if that language is not French, German, Italian or English, in French, German, Italian or English, unless the international tariffs or any agreements concluded between the railways provide otherwise.

TM1 Tanks shall bear in addition to the particulars prescribed in 6.8.2.5.2, the words: 'Do not open during carriage. Liable to spontaneous combustion' (see also the Note above).

TM2 Tanks shall bear in addition to the particulars prescribed in 6.8.2.5.2, the words: 'Do not open during carriage. Gives off flammable gases on contact with water' (see also the Note above).

TM3 Tanks shall also bear, on the plate prescribed in 6.8.2.5.1, the proper shipping names of the approved substances and the maximum permissible load of the tank for each substance, in kg.

The load limits in accordance with 6.8.2.5.2 shall be determined in the light of the maximum permissible load mass of the shell, depending on the substance carried.

TM4 For tanks the following additional particulars shall be marked by stamping or by any other similar method on the plate prescribed in 6.8.2.5.2 or directly on the shell itself, if the walls are so reinforced that the strength of the tank is not impaired: the chemical name with the approved concentration of the substance concerned.

TM5 Tanks shall bear, in addition to the particulars referred to in 6.8.2.5.1 the date (month, year) of the most recent inspection of the internal condition of the shell.

TM6 Tank wagons shall bear an orange band in accordance with 5.3.5.

TM7 The trefoil symbol, as shown in 5.2.1.7.6, shall be marked by stamping or by any other equivalent method on the plate described in 6.8.2.5.1. This trefoil symbol may be applied directly on the walls of the shell itself, if the walls are so reinforced that the strength of the shell is not impaired.

6.8.5. *Requirements concerning the materials and construction of shells of tank wagons and tank-containers for which a test pressure of not less than 1 MPa (10 bar) is prescribed, and of shells of tank wagons and tank-containers intended for the carriage of refrigerated liquefied gases of Class 2*

6.8.5.1. Materials and shells

6.8.5.1.1. (a) Shells intended for the carriage of:

— compressed, liquefied gases or gases dissolved under pressure of Class 2;

— UN 1366, 1370, 1380, 2003, 2005, 2445, 2845, 2870, 3049, 3050, 3051, 3052, 3053, 3076, 3194 and 3203 of Class 4.2; and

— UN 1052 hydrogen fluoride, anhydrous and UN 1790 hydrofluoric acid with more than 85 % hydrogen fluoride of Class 8

shall be made of steel.

(b) (Reserved)

(c) Shells intended for the carriage of refrigerated liquefied gases of Class 2, shall be made of steel, aluminium, aluminium alloy, copper or copper alloy (e.g. brass). However, shells made of copper or copper alloy shall be allowed only for gases containing no acetylene; ethylene, however, may contain not more than 0,005 % acetylene.

(d) Only materials appropriate to the lowest and highest working temperatures of the shells and of their fittings and accessories may be used.

6.8.5.1.2. The following materials shall be allowed for the manufacture of shells:

(a) steels not subject to brittle fracture at the lowest working temperature (see 6.8.5.2.1):

— mild steels (except for refrigerated liquefied gases of Class 2);

— fine-grained steels, down to a temperature of – 60 °C;

— nickel steels (with a nickel content of 0,5 to 9 %), down to a temperature of – 196 °C, depending on the nickel content;

— austenitic chrome-nickel steels, down to a temperature of – 270 °C;

(b) aluminium not less than 99,5 % pure or aluminium alloys (see 6.8.5.2.2);

(c) deoxidized copper not less than 99,9 % pure, or copper alloys having a copper content of over 56 % (see 6.8.5.2.3).

6.8.5.1.3. (a) Shells made of steel, aluminium or aluminium alloys shall be either seamless or welded.

(b) Shells made of austenitic steel, copper or copper alloy may be hard-soldered.

6.8.5.1.4. The fittings and accessories may either be screwed to the shells or be secured thereto as follows:

(a) shells made of steel, aluminium or aluminium alloy: by welding;

(b) shells made of austenitic steel, of copper or of copper alloy: by welding or hard-soldering.

6.8.5.1.5. The construction of shells and their attachment to the underframe of the wagon or in the container frame shall be such as to preclude with certainty any such reduction in the temperature of the load-bearing components as would be likely to render them brittle. The means of attachment of shells shall themselves be so designed that even when the shell is at its lowest working temperature they still possess the necessary mechanical properties.

6.8.5.2. Test requirements

6.8.5.2.1. Steel shells

The materials used for the manufacture of shells and the weld beads shall, at their lowest working temperature, but at least at – 20 °C, meet at least the following requirements as to impact strength:

— The tests shall be carried out with test-pieces having a V-shaped notch;

— The minimum impact strength (see 6.8.5.3.1 to 6.8.5.3.3) for test-pieces with the longitudinal axis at right angles to the direction of rolling and a V-shaped notch (conforming to ISO R 148) perpendicular to the plate surface, shall be 34 J/cm^2 for mild steel (which, because of existing ISO standards, may be tested with test-pieces having the longitudinal axis in the direction of rolling); fine-grained steel; ferritic alloy steel < 5 %, ferritic alloy steel 5 % ≤ Ni ≤ 9 %; or austenitic Cr-Ni steel;

— In the case of austenitic steels, only the weld bead need be subjected to an impact-strength test;

— For working temperatures below – 196 °C the impact-strength test is not performed at the lowest working temperature, but at – 196 °C.

6.8.5.2.2. Shells made of aluminium or aluminium alloy

The seams of shells shall meet the requirements laid down by the competent authority.

6.8.5.2.3. Shells made of copper or copper alloy

It is not necessary to carry out tests to determine whether the impact strength is adequate.

6.8.5.3. Impact-strength tests

6.8.5.3.1. For sheets less than 10 mm but not less than 5 mm thick, test-pieces having a cross-section of 10 mm × e mm, where 'e' represents the thickness of the sheet, shall be used. Machining to 7,5 mm or 5 mm is permitted if it is necessary. The minimum value of 34 J/cm^2 shall be required in every case.

NOTE: No impact-strength test shall be carried out on sheets less than 5 mm thick, or on their weld seams.

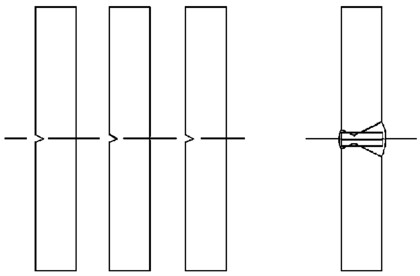
6.8.5.3.2. (a) For the purpose of testing sheets, the impact strength shall be determined on three test-pieces. Test-pieces shall be taken at right angles to the direction of rolling; however, for mild steel they may be taken in the direction of rolling.

(b) For testing weld seams the test-pieces shall be taken as follows:

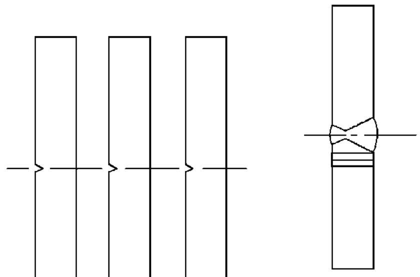
when e ≤ 10 mm:

three test-pieces with the notch at the centre of the weld;

three test-pieces with the notch in the centre of the heat affected zone (the V-notch to cross the fusion boundary at the centre of the specimen);



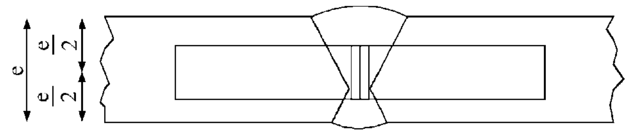
Centre of the weld



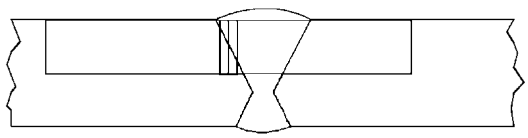
Heat affected zone

when 10 mm < e ≤ 20 mm: three test-pieces from the centre of the weld;

three test-pieces from the heat affected zone (the V-notch to cross the fusion boundary at the centre of the specimen);



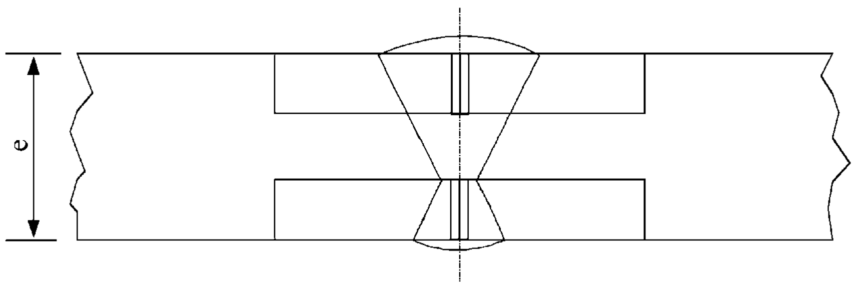
Centre of weld



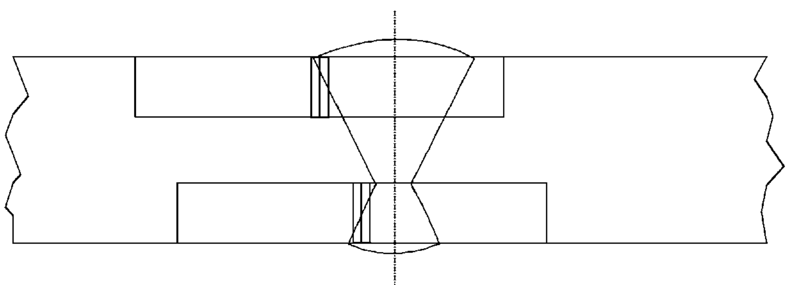
Heat affected zone

when e > 20 mm:

two sets of three test-pieces, one set on the upper face, one set on the lower face at each of the points indicated below (the V-notch to cross the fusion boundary at the centre of the specimen for those taken from the heat affected zone)



Centre of weld



Heat affected zone

6.8.5.3.3. (a) For sheets, the average of the three tests shall meet the minimum value of 34 J/cm^2 indicated in 6.8.5.2.1; not more than one of the individual values may be below the minimum value and then not below 24 J/cm^2.

(b) For welds, the average value obtained from the three test-pieces taken at the centre of the weld shall not be below the minimum value of 34 J/cm^2; not more than one of the individual values may be below the minimum value and then not below 24 J/cm^2.

(c) For the heat affected zone (the V-notch to cross the fusion boundary at the centre of the specimen) the value obtained from not more than one of the three test-pieces may be below the minimum value of 34 J/cm^2, though not below 24 J/cm^2.

6.8.5.3.4. If the requirements prescribed in 6.8.5.3.3 are not met, one retest only may be done if:

(a) the average value of the first three tests is below the minimum value of 34 J/cm^2, or

(b) more than one of the individual values is less than the minimum value of 34 J/cm^2 but not below 24 J/cm^2.

6.8.5.3.5. In a repeated impact test on sheets or welds, none of the individual values may be below 34 J/cm^2. The average value of all the results of the original test and of the retest should be equal to or more than the minimum of 34 J/cm^2.

On a repeated impact strength test on the heat-affected zone, none of the individual values may be below 34 J/cm^2.

CHAPTER 6.9

Requirements for the design, construction, equipment, type approval, testing and marking of fibre-reinforced plastics (FRP) tank-containers

NOTE: For portable tanks see Chapter 6.7; for tank wagons, demountable tanks, tankcontainers and tank swap bodies, with shells made of metallic materials, and batterywagons and multiple element gas containers (MEGCs) see Chapter 6.8.

6.9.1. *General*

6.9.1.1. FRP tank-containers shall be designed, manufactured and tested in accordance with a quality assurance programme recognized by the competent authority; in particular, lamination work and welding of thermoplastic liners shall only be carried out by qualified personnel in accordance with a procedure recognized by the competent authority.

6.9.1.2. For the design and testing of FRP tank-containers, the provisions of 6.8.2.1.1, 6.8.2.1.7, 6.8.2.1.13, 6.8.2.1.14 (a) and (b), 6.8.2.1.25, 6.8.2.1.27 and 6.8.2.2.3 shall also apply.

6.9.1.3. Heating elements shall not be used for FRP tank-containers.

6.9.1.4. (Reserved)

6.9.2. *Construction*

6.9.2.1. Shells shall be made of suitable materials, which shall be compatible with the substances to be carried in a service temperature range of between − 40 °C and + 50 °C, unless temperature ranges are specified for specific climatic conditions by the competent authority of the country where the transport operation is performed.

6.9.2.2. Shells shall consist of the following three elements :

— internal liner,

— structural layer,

— external layer.

6.9.2.2.1. Requirements for fibre-reinforced plastics (FRP) tank-containers 6.9.2.2.1 The internal liner is the inner shell wall zone designed as the primary barrier to provide for the long-term chemical resistance in relation to the substances to be carried, to prevent any dangerous reaction with the contents or the formation of dangerous compounds and any substantial weakening of the structural layer owing to the diffusion of products through the internal liner.

The internal liner may either be a FRP liner or a thermoplastic liner.

6.9.2.2.2. FRP liners shall consist of:

(a) surface layer ('gel-coat'): adequate resin rich surface layer, reinforced with a veil, compatible with the resin and contents. This layer shall have a fibre mass content of not more than 30 % and have a thickness between 0,25 and 0,60 mm;

(b) strengthening layer(s): layer or several layers with a minimum thickness of 2 mm, containing a minimum of 900 g/m^2 of glass mat or chopped fibres with a mass content in glass of not less than 30 % unless equivalent safety is demonstrated for a lower glass content.

6.9.2.2.3. Thermoplastic liners shall consist of thermoplastic sheet material as referred to in 6.9.2.3.4, welded together in the required shape, to which the structural layers are bonded. Durable bonding between liners and the structural layer shall be achieved by the use of an appropriate adhesive.

NOTE: For the carriage of flammable liquids the internal layer may require additional measures in accordance with 6.9.2.14, in order to prevent the accumulation of electrical charges.

6.9.2.2.4. The structural layer of the shell is the zone specially designed according to 6.9.2.4 to 6.9.2.6 to withstand the mechanical stresses. This part normally consists of several fibre reinforced layers in determined orientations.

6.9.2.2.5. The external layer is the part of the shell which is directly exposed to the atmosphere. It shall consist of a resin rich layer with a thickness of at least 0,2 mm. For a thickness larger than 0,5 mm, a mat shall be used. This layer shall have a mass content in glass of less than 30 % and shall be capable of withstanding exterior conditions, in particular the occasional contact with the substance to be carried. The resin shall contain fillers or additives to provide protection against deterioration of the structural layer of the shell by ultra-violet radiation.

6.9.2.3. Raw materials

6.9.2.3.1. All materials used for the manufacture of FRP tank-containers shall be of known origin and specifications.

6.9.2.3.2. Resins

The processing of the resin mixture shall be carried out in strict compliance with the recommendations of the supplier. This concerns mainly the use of hardeners, initiators and accelerators. These resins can be:

— unsaturated polyester resins;

— vinyl ester resins;

— epoxy resins;

— phenolic resins.

The heat distortion temperature (HDT) of the resin, determined in accordance with ISO 75-1:1993 shall be at least 20 °C higher than the maximum service temperature of the tank-container, but shall in any case not be lower than 70 °C.

6.9.2.3.3. Reinforcement fibres

The reinforcement material of the structural layers shall be a suitable grade of fibres such as glass fibres of type E or ECR according to ISO 2078:1993. For the internal surface liner, glass fibres of type C according to ISO 2078:1993 may be used. Thermoplastic veils may only be used for the internal liner when their compatibility with the intended contents has been demonstrated.

6.9.2.3.4. Thermoplastic liner material

Thermoplastic liners, such as unplastified polyvinyl chloride (PVC-U), polypropylene (PP), polyvinylidene fluoride (PVDF), polytetrafluoroethylene (PTFE), etc. may be used as lining materials.

6.9.2.3.5. Additives

Additives necessary for the treatment of the resin, such as catalysts, accelerators, hardeners and thixotropic substances as well as materials used to improve the tank, such as fillers, colours, pigments etc. shall not cause weakening of the material, taking into account lifetime and temperature expectancy of the design.

6.9.2.4. Shells, their attachments and their service and structural equipment shall be designed to withstand without loss of contents (other than quantities of gas escaping through any degassing vents) during the design lifetime:

— the static and dynamic loads in normal conditions of carriage;

— the prescribed minimum loads as defined in 6.9.2.5 to 6.9.2.10.

6.9.2.5. At the pressures as indicated in 6.8.2.1.14 (a) and (b), and under the static gravity forces caused by the contents with maximum density specified for the design and at maximum filling degree, the design stress σ in longitudinal and circumferential direction of any layer of the shell shall not exceed the following value:

$$\sigma \leq \frac{R_m}{K}$$

where:

R_m = the value of tensile strength given by taking the mean value of the test results minus twice the standard deviation of the test results. The tests shall be carried out, in accordance with the requirements of EN 61:1977, on not less than six samples representative of the design type and construction method;

$K = S \times K_0 \times K_1 \times K_2 \times K_3$

where

K shall have a minimum value of 4, and

S = the safety coefficient. For the general design, if the tanks are referred to in column (12) of Table A of Chapter 3.2 by a tank code including the letter 'G' in its second part (see 4.3.4.1.1), the value for S shall be equal to or more than 1.5. For tanks intended for the carriage of substances which require an increased safety level, i.e. if the tanks are referred to in column (12) of Table A of Chapter 3.2 by a tank code including, the number '4' in its second part (see 4.3.4.1.1), the value of S shall be multiplied by a factor of two, unless the shell is provided with protection against damage consisting of a complete metal skeleton including longitudinal and transverse structural members;

K_0 = a factor related to the deterioration in the material properties due to creep and ageing and as a result of the chemical action of the substances to be carried. It shall be determined by the formula:

$$K_0 = \frac{1}{\alpha\beta}$$

where 'α' is the creep factor and 'β' is the ageing factor determined in accordance with EN 978:1997 after performance of the test according to EN 977:1997. Alternatively, a conservative value of $K_0 = 2$ may be applied. In order to determine α and β the initial deflection shall correspond to 2σ;

K_1 = a factor related to the service temperature and the thermal properties of the resin, determined by the following equation, with a minimum value of 1:

$K_1 = 1{,}25 - 0{,}0125\ (HDT - 70)$

where HDT is the heat distortion temperature of the resin, in °C;

K_2 = a factor related to the fatigue of the material; the value of $K_2 = 1{,}75$ shall be used unless otherwise agreed with the competent authority. For the dynamic design as outlined in 6.9.2.6 the value of $K_2 = 1{,}1$ shall be used;

K_3 = a factor related to curing and has the following values:

— 1,1 where curing is carried out in accordance with an approved and documented process

— 1,5 in other cases.

6.9.2.6. At the dynamic stresses, as indicated in 6.8.2.1.2 the design stress shall not exceed the value specified in 6.9.2.5, divided by the factor α.

6.9.2.7. At any of the stresses as defined in 6.9.2.5 and 6.9.2.6, the resulting elongation in any direction shall not exceed 0.2 % or one tenth of the elongation at fracture of the resin, whichever is lower.

6.9.2.8. At the specified test pressure, which shall not be less than the relevant calculation pressure as specified in 6.8.2.1.14 (a) and (b) the maximum strain in the shell shall not be greater than the elongation at fracture of the resin.

6.9.2.9. The shell shall be capable of withstanding the ball drop test according to 6.9.4.3.3 without any visible internal or external defects.

6.9.2.10. The overlay laminates used in the joints, including the end joints, the joints of the surge plates and the partitions with the shell shall be capable of withstanding the static and dynamic stresses mentioned above. In order to avoid concentrations of stresses in the overlay lamination, the applied tapper shall not be steeper than 1:6.

The shear strength between the overlay laminate and the tank components to which it is bonded shall not be less than:

$$\tau = \frac{Q}{l} \leq \frac{\tau_R}{K}$$

where:

τ_R = is the bending shear strength according to EN 63:1977 with a minimum of τ_R= 10 N/mm^2, if no measured values are available;

Q = is the load per unit width that the joint shall carry under the static and dynamic loads;

K = is the factor calculated in accordance with 6.9.2.5 for the static and dynamic stresses;

l = is the length of the overlay laminate.

6.9.2.11. Openings in the shell shall be reinforced to provide at least the same safety factors against the static and dynamic stresses as specified in 6.9.2.5 and 6.9.2.6 as that for the shell itself. The number of openings shall be minimized. The axis ratio of oval-shaped openings shall be not more than 2.

6.9.2.12. For the design of flanges and pipework attached to the shell, handling forces and the fastening of bolts shall also be taken into account.

6.9.2.13. The tank-container shall be designed to withstand, without significant leakage, the effects of a full engulfment in fire for 30 minutes as specified by the test requirements in 6.9.4.3.4. Testing may be waived with the agreement of the competent authority, where sufficient proof can be provided by tests with comparable tank designs.

6.9.2.14. Special requirements for the carriage of substances with a flash-point of not more than 61 °C

FRP tank-containers used for the carriage of substances with a flash-point of not more than 61 °C shall be constructed so as to avoid the accumulation of dangerous electrostatic charges.

6.9.2.14.1. The electrical surface resistance of the inside and outside of the shell as established by measurements shall not be higher than 109 ohms. This may be achieved by the use of additives in the resin or interlaminate conducting sheets, such as metal or carbon network.

6.9.2.14.2. The discharge resistance to earth as established by measurements shall not be higher than 10^7 ohms.

6.9.2.14.3. All components of the shell shall be electrically connected to each other and to the metal parts of the service and structural equipment of the tank-container. The electrical resistance between components and equipment in contact with each other shall not exceed 10 ohms.

6.9.2.14.4. The electrical surface-resistance and discharge resistance shall be measured initially on each manufactured tank-container or a specimen of the shell in accordance with a procedure recognized by the competent authority.

6.9.2.14.5. The discharge resistance to earth of each tank-container shall be measured as part of the periodic inspection in accordance with a procedure recognized by the competent authority.

6.9.3. *Items of equipment*

6.9.3.1. The requirements of 6.8.2.2.1, 6.8.2.2.2 and 6.8.2.2.4 to 6.8.2.2.8 shall apply.

6.9.3.2. In addition, when they are shown under an entry in column (13) of Table A of Chapter 3.2, the special provisions of 6.8.4 (b) (TE) shall also apply.

6.9.4. *Type testing and approval*

6.9.4.1. For any design of a FRP tank-container type, its materials and a representative prototype shall be subjected to the design type testing as outlined below.

6.9.4.2. Material testing

6.9.4.2.1. The elongation at fracture according to EN 61:1977 and the heat distortion temperature according to ISO 75-1:1993 shall be determined for the resins to be used.

6.9.4.2.2. The following characteristics shall be determined for samples cut out of the shell. Samples manufactured in parallel may only be used, if it is not possible to use cutouts from the shell. Prior to testing, any liner shall be removed.

The tests shall cover:

— Thickness of the laminates of the central shell wall and the ends;

— Mass content and composition of reinforcement fibres, orientation and arrangement of reinforcement layers;

— Tensile strength, elongation at fracture and modulus of elasticity according to EN 61:1977 in the direction of stresses. In addition, the elongation at fracture of the resin shall be established by means of ultrasound;

— Bending strength and deflection established by the bending creep test according to EN 63:1977 for a period of 1 000 hours using a sample with a minimum width of 50 mm and a support distance of at least 20 times the wall thickness. In addition, the creep factor α and the ageing factor β shall be determined by this test and according to EN 978:1997.

6.9.4.2.3. The interlaminate shear strength of the joints shall be measured by testing representative samples in the tensile test according to EN 61:1977.

6.9.4.2.4. The chemical compatibility of the shell with the substances to be carried shall be demonstrated by one of the following methods with the agreement of the competent authority. This demonstration shall account for all aspects of the compatibility of the materials of the shell and its equipment with the substances to be carried, including chemical deterioration of the shell, initiation of critical reactions of the contents and dangerous reactions between both.

— In order to establish any deterioration of the shell, representative samples taken from the shell, including any internal liners with welds, shall be subjected to the chemical compatibility test according to EN 977:1997 for a period of 1 000 hours at 50 °C. Compared with a virgin sample, the loss of strength and elasticity modulus measured by the bending test according to EN 978:1997 shall not exceed 25 %. Cracks, bubbles, pitting effects as well as separation of layers and liners and roughness shall not be acceptable.

— Certified and documented data of positive experiences on the compatibility of the filling substances in question with the materials of the shell with which they come into contact at given temperatures, times and any other relevant service conditions.

— Technical data published in relevant literature, standards or other sources, acceptable to the competent authority.

6.9.4.3. Type testing

A representative prototype tank shall be subjected to tests as specified below. For this purpose service equipment may be replaced by other items if necessary.

6.9.4.3.1. The prototype shall be inspected for compliance with the design type specification. This shall include an internal and external visual inspection and measurement of the main dimensions.

6.9.4.3.2. The prototype, equipped with strain gauges at all locations where a comparison with the design calculation is required, shall be subjected to the following loads and the strains shall be recorded:

— Filled with water to the maximum filling degree. The measuring results shall be used to calibrate the design calculation according to 6.9.2.5;

— Filled with water to the maximum filling degree and subjected to accelerations in all three directions by means of driving and braking exercises with the prototype attached to a wagon. For comparison with the design calculation according to 6.9.2.6 the strains recorded shall be extrapolated in relation to the quotient of the accelerations required in 6.8.2.1.2 and measured;

— Filled with water and subjected to the specified test pressure. Under this load, the shell shall exhibit no visual damage or leakage.

6.9.4.3.3. The prototype shall be subjected to the ball drop test according to EN 976-1:1997, No. 6.6. No visible damage inside or outside the tank shall occur.

6.9.4.3.4. The prototype with its service and structural equipment in place and filled to 80 % of its maximum capacity with water, shall be exposed to a full engulfment in fire for 30 minutes, caused by an open heating oil pool fire or any other type of fire with the same effect. The dimensions of the pool shall exceed those of the tank by at least 50 cm to each side and the distance between fuel level and tank shall be between 50 cm and 80 cm. The rest of the tank below liquid level, including openings and closures, shall remain leakproof except for drips.

6.9.4.4. Type approval

6.9.4.4.1. The competent authority or a body designated by that authority shall issue in respect of each new type of tank-container an approval attesting that the design is suitable for the purpose for which it is intended and meets the construction and equipment requirements as well as the special provisions applicable to the substances to be carried.

6.9.4.4.2. The approval shall be based on the calculation and the test report, including all material and prototype test results and its comparison with the design calculation, and shall refer to the design type specification and the quality assurance programme.

6.9.4.4.3. The approval shall include the substances or group of substances for which compatibility with the tank-container is provided. Their chemical names or the corresponding collective entry (see 2.1.1.2), and their Class and classification code shall be indicated.

6.9.4.4.4. In addition, it shall include design and threshold values (such as life-time, service temperature range, working and test pressures, material data) specified and all precautions to be taken for the manufacture, testing, type approval, marking and use of any tankcontainer, manufactured in accordance with the approved design type.

6.9.5. *Inspections*

6.9.5.1. For every tank-container, manufactured in conformity with the approved design, material tests and inspections shall be performed as specified below.

6.9.5.1.1. The material tests according to 6.9.4.2.2, except for the tensile test and for a reduction of the testing time for the bending creep test to 100 hours shall be performed with samples taken from the shell. Samples manufactured in parallel may only be used, if no cutouts from the shell are possible. The approved design values shall be met.

6.9.5.1.2. Shells and their equipment shall either together or separately undergo an initial inspection before being put into service. This inspection shall include:

- a check of conformity to the approved design;
- a check of the design characteristics;
- an internal and external examination;
- a hydraulic pressure test at the test pressure indicated on the tank plate prescribed in 6.8.2.5.1;
- a check of operation of the equipment;
- a leakproofness test, if the shell and its equipment have been pressure tested separately.

6.9.5.2. For the periodic inspection of tank-containers the requirements of 6.8.2.4.2 to 6.8.2.4.4 shall apply.

6.9.5.3. The inspections and tests in accordance with 6.9.5.1 and 6.9.5.2 shall be carried out by an expert approved by the competent authority. Certificates shall be issued showing the results of these operations. These certificates shall refer to the list of the substances permitted for carriage in this tank-container in accordance with 6.9.4.4.

6.9.6. *Marking*

6.9.6.1. The requirements of 6.8.2.5 shall apply to the marking of FRP tank-containers, with the following amendments:

- the tank plate may also be laminated to the shell or be made of suitable plastics materials;
- the design temperature range shall always be marked.

6.9.6.2. In addition, when they are shown under an entry in column (13) of Table A of Chapter 3.2, the special provisions of 6.8.4 (e) (TM) shall also apply.

Part 7

PROVISIONS CONCERNING THE CONDITIONS OF CARRIAGE, LOADING, UNLOADING AND HANDLING

CHAPTER 7.1

General Provisions

7.1.1. The carriage of dangerous goods is subject to the mandatory use of a particular type of transport in accordance with the provisions of this Chapter and Chapter 7.2 for carriage in packages and Chapter 7.3 for carriage in bulk. In addition, the provisions of Chapter 7.5 concerning loading, unloading and handling shall be observed.

Columns (16), (17) and (18) of Table A of Chapter 3.2 show the particular provisions of this Part that apply to specific dangerous goods.

7.1.2. Road vehicles handed over for carriage by piggyback transport, as well as their contents, shall comply with the provisions of Directive 94/55/EC.

7.1.3. Large containers, portable tanks and tank-containers which meet the definition of 'container' given in the CSC, as amended or in UIC leaflets 590 (updated 1.1.89) and 592-1 to 592-4 (updated 1.7.94) ([1]) may not be used to carry dangerous goods unless the large container or the frame of the portable tank or tank-container satisfies the provisions of the CSC or of UIC leaflets 590 and 592-1 to 592-4.

7.1.4. A large container may be presented for transport only if it is structurally serviceable.

'Structurally serviceable' means that the container is free from major defects in its structural components, e.g. top and bottom side rails, top and bottom end rails, door sill and header, floor cross members, corner posts, and corner fittings. 'Major defects' are dents or bends in structural members greater than 19 mm in depth, regardless of length; cracks or breaks in structural members; more than one splice or an improper splice (e.g. a lapped splice) in top or bottom end rails or door headers or more than two splices in any one top or bottom side rail or any splice in a door sill or corner post; door hinges and hardware that are seized, twisted, broken, missing or otherwise inoperative; non-closing gaskets and seals; any distortion of the overall configuration sufficient to prevent proper alignment of handling equipment, mounting and securing on a chassis or wagon.

In addition, deterioration in any component of the container, such as rusted metal in sidewalls or disintegrated fibreglass is unacceptable, regardless of the material of construction. Normal wear, including oxidization (rust), slight dents and scratches and other damage that do not affect serviceability or weather-tightness are, however, acceptable.

Prior to loading the container shall also be checked to ensure that it is free from any residue of a previous load and that the interior floor and walls are free from protrusions.

7.1.5. (Reserved)

7.1.6. (Reserved)

7.1.7. Substances and articles of this Directive, except those which are handed over for carriage as colis express, may only be forwarded in goods trains.

([1]) The UIC leaflets are published by the International Union of Railways — Publications — 16, Rue Jean Rey, F-75015 Paris.

CHAPTER 7.2

Provisions concerning carriage in packages

7.2.1. Unless otherwise provided in 7.2.2 to 7.2.4, packages may be loaded

(a) in closed wagons or in closed containers; or

(b) in sheeted wagons or in sheeted containers; or

(c) in open wagons (unsheeted) or in open containers without tarpaulin.

7.2.2. Packages comprising packagings made of materials sensitive to moisture shall be loaded on to closed wagons or sheeted wagons or into closed or sheeted containers.

7.2.3. Certain packagings and IBCs may only be carried in closed wagons or in closed containers (see 4.1.2.3 and Packing Instructions P002 (PP12), IBC04, IBC05, IBC06, IBC07 and IBC08).

7.2.4. When an alphanumeric code beginning with the letter 'W' is shown in column (16) of table A of Chapter 3.2, the following special provisions apply:

W1 Packages shall be loaded on to closed or sheeted wagons or into closed or sheeted containers.

W2 Substances and articles of Class 1 shall be loaded in closed wagons or closed containers. Articles which, because of their dimensions or their mass, cannot be loaded in closed wagons or closed containers may equally be carried on open wagons or open containers. They shall be covered by sheets. Only wagons fitted with regulation sheet steel spark-guards shall be used for the carriage of substances and articles of divisions 1.1, 1.2, 1.3, 1.5 and 1.6, even when these substances and articles are loaded in large containers. For wagons fitted with a combustible floor, the sheet steel spark-guards shall not be fixed directly to the floor of the wagon.

Military consignments of substances and articles of Class 1 which form part of military equipment and of the structure of military material, may also be loaded onto open wagons under the following conditions:

— consignments shall be accompanied by the competent military authority or, by order of this authority,

— means of initiation not having at least two effective protective devices shall be removed, unless the substances and articles are placed in locked military vehicles.

W3 For free-flowing powdery substances and for fireworks the floor of a wagon or container shall have a non-metallic surface or covering.

W4 (Reserved)

W5 Packages may not be carried in small containers.

W6 Flexible IBCs shall be carried in closed wagons or in closed containers, movableroof wagons or in open wagons or containers covered with an impermeable and non-combustible sheet. Measures shall be taken to ensure that the substances in the wagon cannot, in the event of a leak, come into contact with wood or any other combustible material.

W7 Packages shall be carried in a closed wagon or in a closed container provided with adequate ventilation.

W8 For the carriage of packages bearing an additional label in accordance with Model No. 1, only wagons fitted with regulation sheet steel spark-guards shall be used, even when these substances are loaded in large containers. For wagons fitted with a combustible floor, the sheet steel spark-guards shall not be fixed directly to the floor of the wagon.

W9 Packages shall be carried in closed wagons or in movable-roof wagons or in closed containers.

CHAPTER 7.3

Provisions concerning carriage in bulk

7.3.1. Goods may not be carried in bulk in wagons or containers unless a special provision, identified by the code VW, explicitly authorizing this mode of carriage is indicated in column (17) of Table A of Chapter 3.2 for these goods and unless the conditions of this special provision are satisfied.

Nevertheless, empty packagings, uncleaned may be carried in bulk if this mode of carriage is not explicitly prohibited by other provisions of this Directive.

Unless otherwise provided in the special provisions in 7.3.3, the receptacle requirements for packages shall apply to small containers intended for the carriage of substances in bulk.

Note. For carriage in tanks, see Chapters 4.2 and 4.3.

7.3.2. Suitable measures shall be taken for all carriage in bulk to ensure that none of the contents can escape.

7.3.3. When an alphanumeric code beginning with VW is shown under an entry in column (17) of Table A of Chapter 3.2, the following special provisions apply:

VW1 Carriage in bulk in closed wagons, movable-roof wagons, sheeted wagons, closed containers or in sheeted large containers is permitted.

VW2 Carriage in bulk is permitted in movable-roof wagons with a metal body, closed large metal containers and in wagons or large containers with a metal body covered with a non-combustible sheet.

VW3 Carriage in bulk is permitted in sheeted wagons or sheeted large containers with adequate ventilation or in movable-roof wagons. Suitable measures shall be taken to ensure that none of the contents, particularly any liquid components, can escape.

VW4 Carriage in bulk is permitted in sheeted metal wagons, movable-roof metal wagons, closed metal containers or in sheeted large metal containers. For UN Nos. 2008, 2009, 2210, 2545, 2546, 2881, 3189 and 3190, only carriage in bulk of solid waste is permitted.

VW5 Carriage in bulk is permitted in specially equipped wagons and containers. The receptacles of specially equipped wagons and containers and their closures shall conform to the general packing conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.8. Openings designed for loading and unloading shall be capable of being hermetically closed.

VW6 Carriage in bulk is permitted in movable-roof wagons or in closed large containers.

VW7 Carriage in bulk in closed wagons, sheeted wagons, movable-roof wagons, closed containers or in sheeted large containers is permitted only if the substance is in pieces.

VW8 Carriage in bulk is permitted in open wagons or containers covered with an impermeable and non-combustible sheet, or in movable-roof wagons or in closed containers. Wagons and containers shall be so constructed that the substance being carried shall not be able to come into contact with any part made of wood or other combustible materials, or wooden flooring and sides shall be completely covered with a waterproof and incombustible lining or with a coating of sodium silicate or a similar product.

VW9 Carriage in bulk is permitted in sheeted wagons or in sheeted large containers, movable-roof wagons or in closed containers.

For substances of Class 8, wagons and containers shall be equipped with a suitable and sufficiently stout inner lining.

VW10 Carriage in bulk is permitted in sheeted wagons, sheeted large containers, movable-roof wagons or in closed containers. Wagons and containers shall be leakproof or rendered leakproof, for example by means of a suitable, sufficiently stout inner lining.

VW11 Carriage in bulk is permitted in specially equipped wagons and containers. The receptacles of specially equipped wagons and containers shall be so constructed that the openings designed for loading and unloading can be closed hermetically. Substances shall be filled in the receptacles in a manner which avoids risks to humans, animals and the environment.

VW12 Substances for which carriage in tank wagons, in portable tanks or in tankcontainers is unsuitable because of the high temperature and density of the substance may be carried in special wagons or containers in accordance with standards specified by the competent authority of the country of origin. If the country of origin is not a contracting state, the conditions laid down shall be recognized by the competent authority of the first contracting state reached by the consignment.

VW13 Carriage in bulk in specially equipped wagons or large containers in accordance with standards specified by the competent authority of the country of origin is permited. If the country of origin is not a contracting state, the conditions laid down shall be recognized by the competent authority of the first contracting state reached by the consignment.

VW14 (1) Used batteries may be carried in bulk in specially equipped wagons or containers. Large plastics containers shall not be permitted. Small plastics containers shall be capable of withstanding, when fully loaded, a drop from a height of 0,8 m onto a hard surface at – 18°C, without breakage.

(2) The load compartments of wagons or containers shall be of steel resistant to the corrosive substances contained in the batteries. Less resistant steels may be used when there is a sufficiently great wall thickness or a plastics lining/layer resistant to the corrosive substances. The design of the load compartments of wagons or containers shall take account of any residual currents and impact from the batteries.

Note. Steel exhibiting a maximum rate of progressive reduction of 0.1 mm per year under the effects of the corrosive substances may be considered as resistant.

(3) It shall be ensured by means of constructional measures that there will be no leakage of corrosive substances from the load compartments of wagons or containers during carriage. Open load compartments shall be covered. The cover shall be resistant to the corrosive substances.

(4) Before loading, the load compartments of wagons or containers, including their equipment, shall be inspected. Wagons or containers with damaged load compartments shall not be loaded.

The load compartments of wagons or containers shall not be loaded above the top of their walls.

(5) No batteries containing different substances and no other goods liable to react dangerously with each other shall be present in the load compartments of wagons or containers (see definition of 'Dangerous reaction' in 1.2.1).

During transport no dangerous residue of the corrosive substances contained in the batteries shall adhere to the outer surface of the load compartments of wagons or containers.

CHAPTER 7.4

(Reserved)

CHAPTER 7.5

Provisions concerning loading, unloading and handling

7.5.1. *General provisions*

7.5.1.1. The requirements in force at the dispatching station shall be complied with for the loading of goods, unless any special requirements are prescribed in this Chapter for certain substances.

Packages shall be so loaded in wagons that they cannot shift dangerously, overturn or fall.

7.5.1.2. (Reserved)

7.5.1.3. (Reserved)

7.5.1.4. In accordance with the provisions of 7.5.11 and in conformity with column (18) of Table A of Chapter 3.2, certain dangerous goods shall only be forwarded as a wagon load or full load.

7.5.2. *Mixed loading*

7.5.2.1. Packages bearing different danger labels shall not be loaded together in the same wagon or container unless mixed loading is permitted according to the following Table based on the danger labels they bear.

The mixed loading prohibitions for packages shall also apply to the mixed loading of packages and small containers and the mixed loading of small containers in a wagon or large container in which small containers are carried.

Note. In accordance with 5.4.1.4.2, separate consignment notes shall be drawn up for consignments that cannot be loaded together in the same wagon or container.

Labels Nos	1	1.4	1.5	1.6	2.1, 2.2, 2.3	3	4.1	4.1 + 1	4.2	4.3	5.1	5.2	5.2 + 1	6.1	6.2	7A, B, C	8	9
1	See 7.5.2.2																	([b])
1.4					([a])	([a])	([a])		([a])	([a])	([a])	([a])		([a])	([a])	([a])	([a])	([a]) ([b])
1.5																		([b])
1.6																		([b])
2.1, 2.2, 2.3		([a])			X	X	X		X	X	X	X		X	X	X	X	X
3		([a])			X	X	X		X	X	X	X		X	X	X	X	X
4.1		([a])			X	X	X		X	X	X	X		X	X	X	X	X
4.1 + 1								X										
4.2		([a])			X	X	X		X	X	X	X		X	X	X	X	X
4.3		([a])			X	X	X		X	X	X	X		X	X	X	X	X
5.1		([a])			X	X	X		X	X	X	X		X	X	X	X	X
5.2		([a])			X	X	X		X	X	X	X		X	X	X	X	X
5.2 + 1													X					
6.1		([a])			X	X	X		X	X	X	X		X	X	X	X	X
6.2		([a])			X	X	X		X	X	X	X		X	X	X	X	X
7A, B, C		([a])			X	X	X		X	X	X	X		X	X	X	X	X
8		([a])			X	X	X		X	X	X	X		X	X	X	X	X
9	([b])	([a]) ([b])	([b])	([b])	X	X	X		X	X	X	X		X	X	X	X	X

X Mixed loading permitted.
([a]) Mixed loading permitted with 1.4S substances and articles.
([b]) Mixed loading permitted between goods of Class 1 and life-saving appliances of Class 9 (UN 2990, 3072 and 3268).

7.5.2.2. Packages containing substances or articles of Class 1, bearing a label conforming to models Nos. 1, 1.4, 1.5 or 1.6 which are assigned to different compatibility groups shall not be loaded together in the same wagon or container, unless mixed loading is permitted in accordance with the following Table for the corresponding compatibility groups.

Compatibility group	B	C	D	E	F	G	H	J	L	N	S
B	X		(a)								X
C		X	X	X		X				(b) (c)	X
D	(a)	X	X	X		X				(b) (c)	X
E		X	X	X		X				(b) (c)	X
F					X						X
G		X	X	X		X					X
H							X				X
J								X			X
L									(d)		
N		(b) (c)	(b) (c)	(b) (c)						(b)	X
S	X	X	X	X	X	X	X	X		X	X

X = Mixed loading permitted.

(a) Packages containing articles of compatibility group B and substances and articles of compatibility group D may be loaded together on one wagon provided they are carried in separate containers/compartments of a design approved by the competent authority or a body designated by it, such that there is no danger of transmission of detonation from the articles of compatibility group B to the substances or articles of compatibility group D.

(b) Different types of 1.6N articles may be loaded together as 1.6N articles only when it is proven by testing or analogy that there is no additional risk of sympathetic detonation between the articles. Otherwise they should be treated as hazard division 1.1.

(c) When articles of compatibility group N are loaded with substances or articles of compatibility groups C, D or E, the articles of compatibility group N should be considered as having the characteristics of compatibility group D.

(d) Packages containing substances and articles of compatibility group L may be loaded together on one wagon or in one container with packages containing the same type of substances and articles of that compatibility group.

7.5.2.3. (Reserved)

7.5.3. *Barrier wagons and loading of large containers onto wagons*

7.5.3.1. Every wagon containing substances or articles of Class 1 and bearing a label conforming to models Nos. 1, 1.5 or 1.6, as well as wagons loaded with large containers bearing these labels, shall be separated, by two 2-axle barrier wagons, or one barrier wagon with 4 or more axles, from wagons bearing labels conforming to models Nos. 2.1, 3, 4.1, 4.2, 4.3, 5.1 or 5.2. Empty or loaded wagons not bearing a label conforming to models Nos. 2.1, 3, 4.1, 4.2, 4.3, 5.1 or 5.2 are regarded as barrier wagons.

7.5.3.2. Large containers containing substances or articles of Class 1 and bearing labels conforming to models Nos. 1, 1.5 or 1.6 shall not be loaded on a wagon with large containers or tankcontainers bearing labels conforming to models Nos. 2.1, 3, 4.1, 4.2, 4.3, 5.1 or 5.2.

7.5.4. *Precautions with respect to foodstuffs, other articles of consumption and animal feeds*

If special provision CW28 is indicated for a substance or article in column (18) of Table A of Chapter 3.2, precautions with respect to foodstuffs, other articles of consumption and animal feeds shall be taken as follows.

Packages as well as uncleaned empty packagings, including large packagings and intermediate bulk containers (IBCs), bearing labels conforming to models Nos. 6.1 or 6.2 and those bearing labels conforming to model No. 9 containing goods of UN 2212, 2315, 2590, 3151, 3152 or 3245, shall not be stacked on or loaded in immediate proximity to packages known to contain foodstuffs, other articles of consumption or animal feeds in wagons, in containers and at places of loading, unloading or transhipment.

When these packages, bearing the said labels, are loaded in immediate proximity of packages known to contain foodstuffs, other articles of consumption or animal feeds, they shall be kept apart from the latter:

(a) by complete partitions which should be as high as the packages bearing the said labels; or

(b) by packages not bearing labels conforming to models Nos. 6.1, 6.2 or 9 or packages bearing labels conforming to model No. 9 but not containing goods of UN 2212, 2315, 2590, 3151, 3152 or 3245, or

(c) by a space of at least 0,8 m,

unless the packages bearing the said labels are provided with an additional packaging or are completely covered (e.g. by a sheeting, a fibreboard cover or other measures).

7.5.5. (Reserved)

7.5.6. (Reserved)

7.5.7. (Reserved)

7.5.8. *Cleaning after unloading*

7.5.8.1. If, when a wagon or container which has been loaded with packaged dangerous goods is unloaded, some of the contents are found to have escaped, the wagon or container shall be cleaned as soon as possible and in any case before reloading.

If cleaning is not possible on the spot, the wagon or container shall be moved to the nearest suitable place where cleaning can be carried out, taking into account sufficient safety during carriage.

Sufficient safety during carriage is deemed to have been met if suitable measures to avoid the uncontrolled release of escaped dangerous substances have been taken.

7.5.8.2. Wagons or containers which have been loaded with dangerous goods in bulk shall be properly cleaned before reloading unless the new load consists of the same dangerous substance as the preceding load.

7.5.9. (Reserved)

7.5.10. (Reserved)

7.5.11. *Additional provisions applicable to certain classes or specific goods*

In addition to the provisions of 7.5.1 to 7.5.4 and 7.5.8, the following special provisions shall apply when an alphanumeric code beginning with CW is shown in column (18) of table A of Chapter 3.2.

CW1 Before loading, the floor of the wagon or container shall be carefully cleaned by the consignor.

No metal objects in the interior of the wagon or container other than those forming part of the construction of the wagon or container shall be allowed to protrude.

The doors and ventilator shutters of the wagons or containers shall be closed.

Packages shall be so loaded and stowed in the wagon or container that they cannot move or shift. They shall be protected against any chafing or bumping.

CW2 (Reserved)
CW3

CW4 Substances and articles of compatibility group L may only be carried as a full load or as a wagon load.

CW5 (Reserved)
CW8

CW9 Packages shall not be thrown or subjected to impact.

CW10 Cylinders as defined in 1.2.1, shall be laid parallel to or at right angles to the longitudinal axis of the wagon or container; however, those situated near the forward transverse wall shall be laid at right angles to the said axis.

Short cylinders of large diameter (about 30 cm and over) may be stowed longitudinally with their valve-protecting devices directed towards the middle of the wagon or container.

Cylinders which are sufficiently stable or are carried in suitable devices effectively preventing them from overturning may be placed upright.

Cylinders which are laid flat shall be securely and appropriately wedged, attached or secured so that they cannot shift.

Receptacles designed to be rolled shall be laid with their longitudinal axis parallel to that of the wagon or container and shall be secured against any lateral movement.

CW11 Receptacles shall always be placed in the position for which they were designed and be protected against any possibility of being damaged by other packages.

CW12 When pallets loaded with articles are stacked, each tier of pallets shall be evenly distributed over the lower tier, if necessary by the interposition of a material of adequate strength.

CW13 If any substances have leaked and been spilled in a wagon or container, it may not be re-used until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated. Any other goods and articles carried in the same wagon or container shall be examined for possible contamination.

CW14 (Reserved)
CW15

CW16 Consignments of UN 1749 chlorine trifluoride with a gross mass of more than 500 kg shall only be carried as a wagon load or as a full load and in quantities not exceeding 5 000 kg per wagon or large container.

CW17 Packages containing substances of this Class which are to be carried at a specific ambient temperature shall only be carried as a wagon load or as a full load. The conditions of carriage shall be agreed between the consignor and the carrier.

CW18 Packages shall be so stowed that they are readily accessible.

CW19 (Reserved)
CW21

CW22 Wagons and large containers shall be thoroughly cleaned before loading.

Packages shall be loaded so that a free circulation of air within the loading space provides a uniform temperature of the load. If the contents of one wagon or large container exceed 5 000 kg of these substances, the load shall be divided into stacks of not more than 5 000 kg separated by air spaces of at least 0,05 m. Packages shall be protected from being damaged by other packages.

CW23 When handling packages, special measures shall be taken to ensure that they do not come into contact with water.

CW24 Before loading, wagons and containers shall be thoroughly cleaned and in particular be free of any combustible debris (straw, hay, paper, etc.).

The use of readily flammable materials for stowing packages is prohibited.

CW25 (Reserved)

CW26 The wooden parts of a wagon or container which have come into contact with these substances shall be removed and burnt.

CW27 (Reserved)

CW28 See 7.5.4.

CW29 Packages shall be stored upright.

CW30 The consignor and the carrier shall come to an agreement on the conditions of carriage before consignments are handed over for the carriage of refrigerated liquefied gases in tank wagons or tank-containers fitted with safety valves.

CW31 Wagons or large containers which have contained substances of this Class as wagon loads or as full loads shall be checked, after unloading, for any residues of the load.

CW32 (Reserved)

CW33 *Note 1.* 'Critical group' means a group of the public which, in relation to its exposure to an existing source of radiation and an existing path of exposure, is sufficiently homogeneous and which is characteristic for individuals who receive the maximum dose from the source of radiation by means of the existing path of exposure.

Note 2. 'Public' means, in general, all individuals in the population, except those who are exposed to radiation as a result of professional or medical reasons.

Note 3. 'Worker' means everybody who works either full time, part time or occasionally for an employer and who has assumed rights and duties with regard to radiation protection at work.

(1) *Segregation*

(1.1) Packages, overpacks, containers and tanks shall be segregated during carriage:

(a) from areas where persons other than those referred to in paragraph (c) have regular access;

(i) in accordance with Table A below; or

(ii) by a distance calculated to ensure members of the critical group in that area receive less than 1mSv per year;

and

b) from undeveloped photographic film and mailbags, in accordance with Table B below;

Note. Mailbags shall be assumed to contain undeveloped film and plates and therefore be separated from radioactive material in the same way.

and

c) from workers in regularly occupied working areas either;

(i) in accordance with Table A below; or

(ii) by a distance calculated to ensure that workers in that area receive less than 5mSv per year;

Note. Workers subject to individual monitoring for the purpose of radiation protection shall not be considered for the purpose of segregation.

and

d) from other dangerous goods in accordance with 7.5.2.1.

TABLE A

Minimum distances between packages of category II-YELLOW or of category III-YELLOW and persons

Sum of transport indexes not more than	Exposure time per year (hours)			
	Areas where members of the public have no regular access		Regularly occupied working areas	
	50	250	50	250
	Segregation distance in metres, no shielding material intervening, from:			
2	1	3	0,5	1
4	1,5	4	0,5	1
8	2,5	6	1,0	2,5
12	3	7,5	1,0	3
20	4	9,5	1,5	4
30	5	12	2	5
40	5,5	13,5	2,5	5,5
50	6,5	15,5	3	6,5

(1.2) Category II-YELLOW or III-YELLOW packages or overpacks shall not be carried in compartments occupied by passengers, except those exclusively reserved for couriers specially authorized to accompany such packages or overpacks.

(1.3) (Reserved)

(1.4) Radioactive material shall be sufficiently segregated from undeveloped photographic film. The basis for determining segregation distances for this purpose shall be that the radiation exposure of undeveloped photographic film due to the transport of radioactive material be limited to 0,1 mSv per consignment of such film (see Table B below).

TABLE B

Minimum distances between packages of category II-YELLOW or of category IIIYELLOW and packages bearing the word 'FOTO', or mailbags

Total number of packages not more than		Sum of transport indexes not more than	Journey or storage duration, in hours							
Category yellow			1	2	4	10	24	48	120	240
III	II		Minimum distances in metres							
		0,2	0,5	0,5	0,5	0,5	1	1	2	3
		0,5	0,5	0,5	0,5	1	1	2	3	5
	1	1	0,5	0,5	1	1	2	3	5	7
	2	2	0,5	1	1	1,5	3	4	7	9
	4	4	1	1	1,5	3	4	6	9	13
	8	8	1	1,5	2	4	6	8	13	18
1	10	10	1	2	3	4	7	9	14	20
2	20	20	1,5	3	4	6	9	13	20	30
3	30	30	2	3	5	7	11	16	25	35
4	40	40	3	4	5	8	13	18	30	40
5	50	50	3	4	6	9	14	20	32	45

(2) *Activity limits*

The total activity in a wagon, for carriage of LSA material or SCO in Industrial Packages Type 1 (Type IP-1), Type 2 (Type IP-2), Type 3 (Type IP-3) or unpackaged, shall not exceed the limits shown in Table C below.

TABLE C

Wagon activity limits for LSA material and SCO in industrial packages or unpackaged

Nature of material	Activity limit for wagon
LSA-I	No limit
LSA-II and LSA-III non-combustible solids	No limit
LSA-II and LSA-III combustible solids, and all liquids and gases	100 A_2
SCO	100 A_2

(3) *Stowage during transport and storage in transit*

(3.1) Consignments shall be securely stowed.

(3.2) Provided that its average surface heat flux does not exceed 15 W/m^2 and that the immediately surrounding cargo is not in bags, a package or overpack may be carried or stored among packaged general cargo without any special stowage provisions except as may be specifically required by the competent authority in an applicable approval certificate.

(3.3) Loading of containers and accumulation of packages, overpacks and containers shall be controlled as follows:

(a) Except under the condition of exclusive use, the total number of packages, overpacks and containers in a single wagon shall be so limited that the total sum of the transport indexes in the wagon does not exceed the values shown in Table D below. For consignments of LSA-I material there shall be no limit on the sum of the transport indexes;

(b) Where a consignment is transported under exclusive use, there shall be no limit on the sum of the transport indexes within a single wagon;

(c) The radiation level under routine conditions of transport shall not exceed 2 mSv/h at any point on, and 0,1 mSv/h at 2 m from, the external surface of the wagon;

(d) The total sum of the criticality safety indexes in a container or wagon shall not exceed the values shown in Table E below.

TABLE D

Transport Index limits for containers and wagons not under exclusive use

Type of container or wagon	Limit on total sum of transport indexes in a container or wagon
Small container	50
Large container	50
Wagon	50

TABLE E

Criticality Safety Index for containers and wagons containing fissile material

Type of container or wagon	Limit on total sum of criticality safety indexes in a container or wagon	
	Not under exclusive use	Under exclusive use
Small container	50	n.a.
Large container	50	100
Wagon	50	100

(3.4) Any package or overpack having either a transport index greater than 10, or any consignment having a criticality safety index greater than 50, shall be transported only under exclusive use.

(3.5) For consignments under exclusive use, the radiation level shall not exceed:

(a) 10 mSv/h at any point on the external surface of any package or overpack, and may only exceed 2 mSv/h provided that:

(i) the wagon is equipped with an enclosure which, during routine conditions of transport, prevents the access of unauthorized persons to the interior of the enclosure, and

(ii) provisions are made to secure the package or overpack so that its position within the wagon enclosure remains fixed during routine conditions of transport, and

(iii) there is no loading or unloading during the shipment;

b) 2 mSv/h at any point on the outer surfaces of the wagon, including the upper and lower surfaces, or, in the case of an open wagon, at any point on the vertical planes projected from the outer edges of the wagon, on the upper surface of the load, and on the lower external surface of the wagon, and

c) 0,1 mSv/h at any point 2 m from the vertical planes represented by the outer lateral surfaces of the wagon if the load is transported in an open wagon, any point 2 m from the vertical planes projected from the outer edges of the wagon.

(4) *Segregation of packages containing fissile material during transport and storage in transit*

(4.1) The number of packages, overpacks and containers containing fissile material stored in transit in any one storage area at the same time shall be so limited that the total sum of the criticality safety indexes in any group of such packages, overpacks or containers does not exceed 50. Groups of such packages, overpacks and containers shall be stored so as to maintain a spacing of at least 6 m from other groups of such packages, overpacks or containers.

(4.2) Where the total sum of the criticality safety indexes in a wagon or in a container exceeds 50, as permitted in Table E above, storage shall be such as to maintain a spacing of at least 6 m from other groups of packages, overpacks or containers containing fissile material or other wagons carrying radioactive material.

(5) *Damaged or leaking packages, contaminated packagings*

(5.1) If it is evident that a package is damaged or leaking, or if it is suspected that the package may have leaked or been damaged, access to the package shall be restricted and a qualified person shall, as soon as possible, assess the extent of contamination and the resultant radiation level of the package. The scope of the assessment shall include the package, the wagon, the adjacent loading and unloading areas, and, if necessary, all other material which has been carried in the wagon.

When necessary, additional steps for the protection of persons' property and the environment, in accordance with provisions established by the competent authority, shall be taken to overcome and minimize the consequences of such leakage or damage.

(5.2) Packages damaged or leaking radioactive contents in excess of allowable limits for normal conditions of transport may be removed to an acceptable interim location under supervision, but shall not be forwarded until repaired or reconditioned and decontaminated.

(5.3) A wagon and equipment used regularly for the transport of radioactive material shall be periodically checked to determine the level of contamination. The frequency of such checks shall be related to the likelihood of contamination and the extent to which radioactive material is transported.

(5.4) Except as provided in paragraph (5.5), any wagon, or equipment or part thereof which has become contaminated above the limits specified in 4.1.9.1.2 in the course of the transport of radioactive material, or which shows a radiation level in excess of 5 μSv/h at the surface, shall be decontaminated as soon as possible by a qualified person and shall not be re-used unless the non-fixed contamination does not exceed the limits specified in 4.1.9.1.2, and the radiation level resulting from the fixed contamination on surfaces after decontamination is less than 5 μSv/h at the surface.

(5.5) An overpack, container, tank, intermediate bulk container or wagon dedicated to the transport of radioactive material under exclusive use shall be excepted from the requirements of the previous paragraph (5.4) and in 4.1.9.1.2 solely with regard to its internal surfaces and only for as long as it remains under that specific exclusive use.

(6) *Other requirements*

Where a consignment is undeliverable, the consignment shall be placed in a safe location and the competent authority shall be informed as soon as possible and a request made for instructions on further action.

CHAPTER 7.6

Provisions for carriage as colis express (express goods)

Goods are only permitted for carriage as express goods when a special provision with an alphanumeric code beginning with the letters 'CE' is shown in column (19) of Table A of Chapter 3.2 specifically authorizing this form of transport, and the conditions of this special provision are complied with.

The following special provisions apply when they are shown under an entry in column (19) of Table A of Chapter 3.2.

CE1 An express parcels package shall not weigh more than 40 kg. Express parcels consignments may be loaded in railway vehicles which can simultaneously serve for the carriage of persons, but only up to a limit of 100 kg per vehicle.

CE2 An express parcels package shall not weigh more than 40 kg.

CE3 An express parcels package shall not weigh more than 50 kg.

CE4 An express parcels package shall not contain more than 45 litres of this substance and shall not weigh more than 50 kg.

CE5 An express parcels package shall not contain more than 2 litres of this substance.

CE6 An express parcels package shall not contain more than 4 litres of this substance.

CE7 An express parcels package shall not contain more than 6 litres of this substance.

CE8 An express parcels package shall not contain more than 12 litres of this substance.

CE9 An express parcels package shall not contain more than 4 kg of this substance.

CE10 An express parcels package shall not contain more than 12 kg of this substance.

CE11 An express parcels package shall not contain more than 24 kg of this substance.

CE12 When sent as an express parcel, the substance shall be contained in unbreakable receptacles. An express parcels package shall not weigh more than 25 kg.

CE13 Only inorganic cyanides containing precious metals, and mixtures of these may be sent as express parcels. In this case, combination packagings with inner packagings of glass, plastics or metal in accordance with 6.1.4.21 shall be used. An express parcels package shall not contain more than 2 kg of the substance.

Carriage in luggage vans or luggage compartments accessible to passengers shall be authorized if, by means of appropriate measures, packages are placed out of reach of non-authorized persons.

CE14 Only substances which are not to be carried at a specific ambient temperature may be forwarded as express parcels. In this case, the following quantity limits shall apply:

— for substances other than those covered by 2.2.62.1.8: up to 50 ml per package for liquids and up to 50 g per package for solids.

— for substances covered by 2.2.62.1.8: in quantities as specified in that sub-section.

— For body parts or organs, a package shall not weigh more than 50 kg.

CE15 For express parcels packages, the sum of the transport indexes on the danger labels in a luggage van or luggage compartment shall not be more than 10. For packages of category III-YELLOW, the carrier may determine the time of delivery of the consignment. An express parcels package shall not weigh more than 50 kg.

CHAPTER 7.7

Hand Luggage and Luggage

Substances and articles of this Directive are excluded from carriage as luggage, provided the tariffs do not allow exceptions.