Proposal for a Council Directive on the approximation of the laws of the Member States in respect of the trace elements boron, cobalt, copper, iron, manganese, molybdenum and zinc contained in fertilizers

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(Submitted by the Commission to the Council on 27 October 1988)

(88/C 304/08)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Article 2

Having regard to the Treaty establishing the European Economic Community and in particular Article 100a thereof,

Having regard to the proposal from the Commission,

In cooperation with the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas it is necessary to adopt measures intended gradually to establish the internal market during a period expiring on 31 December 1992; whereas the internal market consists of an area without internal frontiers within which the free movement of goods, persons, services and capital is guaranteed;

Whereas Council Directive 76/116/EEC of 18 December 1975 on the approximation of the laws of the Member States relating to fertilizers (¹), as last amended by Directive 88/183/EEC (²) lays down rules on the marketing of EEC-type solid fertilizers; whereas it has proved necessary to extend this Directive to cover trace elements contained in fertilizers and mixtures thereof;

Whereas Directive 76/116/EEC should henceforth apply to solid or fluid fertilizers containing certain of the trace elements referred to in the above recital;

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. Solid or fluid fertilizers containing one of the trace elements boron, cobalt, copper, iron, manganese, molybdenum and zinc which meet the requirements of Chapter A of the Annex may be marked 'EEC fertilizer'.

2. Mixtures of at least two of the fertilizers referred to in paragraph 1 containing at least two different fertilizers may be termed 'EEC fertilizers' if they meet the requirements of Chapter B of the Annex. EEC fertilizers complying with the provisions of Article 1 shall be packaged.

Article 3

The content of one or more of the trace elements boron, cobalt, copper, iron, manganese, molybdenum or zinc in the EEC fertilizers listed in Annex I to Directive 76/116/EEC shall be declared where the following two conditions are fulfilled:

- (a) the elements are added and present at least in the minimum quantities specified in chapters C and D of the Annex to this Directive;
- (b) the EEC fertilizers continue to satisfy the requirements of Annex I to Directive 76/116/EEC.

Where they are the normal ingredients of the raw materials intended to supply major and secondary elements their declaration shall be optional in the case of fertilizers applied to the soil.

Article 4

The compulsory markings for the identification of the fertilizers covered by this Directive shall be as follows:

- (a) 'EEC FERTILIZER' in capital letters,
- (b) the designation of the type of fertilizer:
 - either in accordance with chapter A of the Annex,
 - or as the type designation 'Mixture of trace elements', followed by the name or names of the trace elements present or their chemical symbol,
 - or in accordance with Annex I to Directive 76/116/EEC, by adding to the type designation either 'with trace elements' or 'with ...' followed by the names of the trace elements present or by the chemical symbol.

Only the numbers stating the contents of the major and secondary elements covered by Directive 76/116/EEC follow the type designation.

^{(&}lt;sup>1</sup>) OJ No L 24, 30. 1. 1976, p. 21.

⁽²⁾ OJ No L 83, 22. 3. 1988, p. 33.

Where several trace elements are present they shall be listed in the alphabetical order of their chemical symbols: B, Co, Cu, Fe, Mn, Mo, Zn.

- (c) the guaranted content in respect of each nutrient and the guaranteed content expressed as forms and/or solubilities where these are specified in the Annexes to Directive 76/116/EEC and, for each trace element present, as required by Article 6.
- (d) where all or part of the trace element is chemically linked with an organic molecule, the name of that element is then followed by one of the following qualifiers:
 - 'chelated by ...' (name of chelating agent or its abbreviation as set out in Chapter E1 of the Annex)
 - 'complexed by ...' (name of the complexing organic matter, as set out in Chapter E2 of the Annex.

The trace element content shall be expressed as a percentage by weight, in whole numbers for fertilizers only containing one trace element (Chapter A of the annex). Where fertilizers contain several trace elements the number of decimal places may, for a given element, be as set out in Chapters B, C and D of the Annex.

Trace elements shall at the same time be expressed by their literal designation and by their chemical symbol.

The following shall be entered on the label or accompanying papers, below the obligatory or optional declarations:

"To be used only where there is a recognized need. Do not exceed the appropriate dose rates'.

Article 5

Member States may authorize on their territory and on the responsibility of the person in charge of its marketing that dose rates and conditions of use may be stated which are suitable for the soil and crop conditions under which the fertilizer is used. This information must be clearly separated from the obligatory declarations provided for in Article 4.

Article 6

Member States shall require that the trace-element content of EEC fertilizers placed on the market must be stated in the form of elements (B, Co, Cu, Fe, Mn, Mo, Zn). The trace element content of a fertilizer shall be declared in the following manner:

- (a) for the fertilizers referred to in Article 1 (1): in accordance with the requirements set out in Chapter A (column 6) of the Annex.
- (b) for the fertilizers referred to in Article 1 (2) and Article 3 by indicating:
 - the total content, expressed as a percentage by weight of the fertilizer (content determined under the conditions laid down in the methods of analysis provided for in Article 8 of Directive 76/116/EEC.
 - the water-soluble content, expressed as a percentage by weight of the fertilizer, where that solubility is at least half of the total content.
 - Where an element is totally water-soluble, only the water-soluble, content shall be declared.

Where an element is chemically linked with an organic molecule the quantity present in the fertilizer shall be declared immediately following the water-soluble quantity as a percentage by weight of the product, followed by one of the terms: 'chelated by' or 'complexed by' with the name of the organic mulecule as set out in chapter E of the Annex. The name of the organic molecule may be replaced by its initials.

Article 7

The tolerance allowed in respect of the declared traceelement content shall be:

- for a content of more than 2 %: 0,4 % in absolute terms
- for a content not exceeding 2 %: 20 % of the declared value.

Article 8

1. Member States shall bring into force the laws, regulations and administrative provisions necessary in order to comply with this Directive by 1 January 1991 at the latest. They shall forth with inform the Commission thereof.

2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt in the field governed by this Directive.

Article 9

This Directive is addressed to the Member States.

ANNEX

CHAPTER A

Fertilizers only containing one trace element

Note 1:

A chelating agent may be designated by means of its initials as set out in Chapter E of this Annex.

Note 2:

If the product leaves no solid residue after dissolution it may be described as 'for dissolution'.

Note 3:

Where a trace element is present in a chelated form, the pH range guaranteeing acceptable stability of the chelated fraction shall be stated.

Number	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) data on the expression of nutrients; other requirements	Other data or type designation	Nutrient content to be declared; forms and solubilities of the nutrients; other criteria
(1)	(2)	(3)	(4)	(5)	(6)

BORON

1a	Boric acid	Product obtained by the action of an acid on a borate	14 % water-soluble B	The normal trade designations may be added	Water-soluble (B)
1b	Sodium borate	Product obtained chemically and having as its essential ingredient a sodium borate	10 % water-soluble B	The normal trade designations may be added	Water-soluble boron (B)
1c	Calcium borate	Product obtained partly from colemanite or pandermite, and having as its essential ingredient calcium borates	7 % total B Particle size at least 98 % passing through a 0,063 mm sieve	The normal trade designations may be added	Total boron (B)
1d	Boron ethanol amine	Product obtained from the reaction of boric acid with an alcohol amine	10 % water-soluble B		Soluble boron (B)
1e	Borated fertilizer in solution or suspension	Product obtained by dissolution or suspension in water of types 1a, 1b, 1d	2 % total B		Total boron (B) and water-soluble boron (B) if this accounts for at least one quarter of the total B

COBALT

2a	Cobalt salt	Product obtained chemically, and having as its essential ingredient, a mineral salt of cobalt	19 % water-soluble cobalt (Co)	The designation must include the name of the combined mineral anion	Water-soluble cobalt (Co)
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(1)	(2)	(3)	(4)	(5)	(6)
2b	Cobalt chelate	Product obtained by combining cobalt chemically with a chelating agent	2 % water-soluble Co, at least */10 of which has been chelated	Nature of the chelating agent	Water-soluble cobalt (Co) Chelated cobalt
2c	Solution of cobalt fertilizer	Product obtained by dissolving types 2a and/or 2b	2 % water-soluble Co	The designation must include the name of the mineral anion and/or the nature of the chelating agent	Water-soluble cobalt (Co) Chelated cobalt
COPPEI	R	•••		.	<u>.</u>
3a	Copper salt	Product obtained chemically and having as its essential ingredient a mineral salt of copper	20 % water-soluble Cu	The designation must include the name of the combined anion	Water-soluble copper (Cu)
3b	Copper oxide	Product obtained chemically and having as its essential ingredient copper oxide	70 % total Cu Particle size: at least 98 % passing through a 0,063 mm sieve		Total copper (Cu)
3с	Copper hydroxide	Product obtained chemically and having as its essential ingredient copper hydroxide	45 % total Cu Particle size: at least 98 % passing through a 0,063 mm sieve	Designation by means of initials shall be permitted	Water-soluble copper (Cu)
3d	Copper chelate	Product obtained by combining copper chemically with a chelating agent	9 % water-soluble copper of which at least ¹ /10 chelated	Nature of the chelating agent	Water-soluble copper (Cu) Chelated copper (Cu)
3е	Copper-based fertilizer	Product obtained by mixing types 3a, 3b, 3c, 3d and a filler that is neither nutrient nor toxic	5 % total copper Particle size: 98 % passing through a 0,063 mm sieve	Nature of the chelating agent	Total copper (Cu) Water-soluble copper if this accounts for at least one quarter of the total copper Chelated copper (Cu)
3f	Copper fertilizer solution	Product obtained by dissolving types 3a and 3d in water	3 % water-soluble Cu	Nature of the chelating agent	Copper (Cu), a proportion of which is chelated copper
IRON			· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •	
4a	Iron salt	Product obtained	12 % water-soluble Fe	The designation will	Water-soluble iron (Fe)

4a	Iron salt	Product obtained chemically in water and having as its essential ingredient a ferrous salt (Fe II)	12 % water-soluble Fe	The designation will include the name of the combined anion, if the product leaves no solid residue after dissolution it may be described as 'for dissolution'	Water-soluble iron (Fe)
4b	Iron chelate	Product obtained by combining iron chemically with a chelating agent	5 % water-soluble Fe, of which at least ⁹ /10 has been chelated	Nature of the chelating agent	Water-soluble iron (Fe) Chelated iron (Fe)

(1)	(2)	(3)	(4)	(5)	(6)
4c	Iron fertilizer solution and suspension	Product obtained by dissolving types 4a and/or 4b in water	2 % water-soluble Fe	Nature of the chelating agent	Water-soluble iron (Fe) Chelated iron (Fe)

MANGANESE

5a	Manganese salt	Product obtained chemically and having as its essential ingredient a mineral salt of manganese (II)	17 % water-soluble Mn	The designation must include the name of the combined anion	Water-soluble manganese (Mn)
5b	Manganese chelate	Product obtained by combining manganese chemically with a chelating agent	5 % water-soluble Mn, of which at least ⁹ /10 has been chelated	Nature of the chelating agent	Water-soluble manganese (Mn) Chelated manganese (Mn)
5c	Manganese oxide	Product obtained chemically and having as its essential ingredients manganese oxides	40 % total Mn Particle size: at least 80 % passing through a 0,063 mm sieve		Total manganese (Mn)
5d	Manganese-based fertilizer	Product obtained by mixing types 5a and/or 5b in water	17 % total Mn		Total manganese (Mn) Water-soluble manganese (Mn) if this accounts for at least one quarter of the total manganese
5e	Fertilizer in manganese-based solution	Product obtained by dissolving types 5a and/or 5b in water	3 % water-soluble Mn	Nature of the chelating agent	Water-soluble manganese (Mn) Chelated manganese content
5f	Organic manganese complex	Product obtained by combining manganese chemically with an organic complexing agent provided for in the Annex	2 % water-soluble Mn, of which at least 80 % complexed		Water-soluble manganese (Mn) Complexed manganese (Mn)

MOLYBDENUM

6a	Sodium molybdate	Product obtained chemically and having as its essential ingredient sodium molybdate	35 % water-soluble Mo	If the product leaves no solid residue after dissolution it may be described as 'for dissolution'	Water-soluble molybdenum (Mo)
 6b	Ammonium molybdate	Product obtained chemically and having as its essential ingredient ammonium molybdate	50 % water-soluble Mo		Water-soluble molybdenum (Mo)
6c	Molybdenum-based fertilizer	Product obtained by mixing types 6a and 6b	35 % water-soluble Mo		Water-soluble molybdenum (Mo)
6d	Molybdenum fertilizer in solution	Product obtained by dissolving types 6a and/or 6b in water	3 % water-soluble Mo		Water-soluble molybdenum (Mo)

(1)	(2)	(3)	(4)	(5)	(6)
ZINC	đ				
7a	Zinc salt	Product obtained chemically and having as its essential ingredient a mineral salt of zinc	15 % water-soluble Zn	The designation will include the name of the combined anion	Water-soluble zinc (Zn)
7b	Zinc chelate	Product obtained by combining zinc chemically with a chelating agent	5 % water-soluble Zn	Nature of the chelating agent	Water-soluble zinc (Zn) Chelated zinc (Zn)
7c	Zinc oxide	Product obtained chemically and having as its essential ingredient zinc oxide	75 % total Zn		Total zinc (Zn)
7d	Zinc-based fertilizer	Product derived from types 7a and 7b	30 % water-soluble Zn		Total zinc (Zn) Water-soluble zinc (Zn), if this accounts for at least one quarter of the total zinc
7e	Zinc-based solution or suspension	Product obtained by dissolving or suspending in water types 7a and 7b	3 % water-soluble Zn	Nature of the chelating agent	Water-soluble zinc (Zn) Content of chelated zinc
7f	Organic zinc complex	Product obtained by combining zinc chemically with a complexing agent provided for in the Annex	2 % water-soluble Zn, of which at least 80 % complexed		Water-soluble zinc (Zn) Complexed zinc (Zn)

Minimum trace element contents, percentage mass of the product

CHAPTER B

Solid fluid mixtures of trace elements

	Where the trace element is present in a form		
	exclusively mineral	chelated or complexed	
For a trace element:			
Boron (B)	0,2	0,2	
Cobalt (Co)	0,02	0,02	
Copper (Cu)	0,5	0,1	
Iron (Fe)	2,0	0,3	
Manganese (Mn)	0,5	0,1	
Molybdenum (Mo)	0,02		
Zinc (Zn)	0,5	0,1	

Minimum total of trace elements in a solid mixture: 5 % by mass of the fertilizer. Minimum total of trace elements in a fluid mixture: 2 % by mass of the fertilizer.

CHAPTER C

EEC fertilizers containing major and/or secondary elements with trace elements applied to the soil

	For crops or grassland	For horticultural use
Boron (B)	0,01	0,01
Cobalt (Co)	0,002	_
Copper (Cu)	0,01	0,002
Iron (Fe)	0,5	0,02
Manganese (Mn)	0,1	0,01
Molybdenum (Mo)	0,001	0,001
Zinc (Zn)	0,01	0,002

CHAPTER D

EEC fertilizers containing major and secondary elements with trace elements for leaf sprays

Boron (B):	0,01
Cobalt (Co) (1):	0,0005
Copper (Cu):	0,002
Iron (Fe):	0,02
Manganese (Mn):	0,01
Molybdenum (Mo):	0,001
Zinc (Zn):	0,002

⁽¹⁾ Cobalt is only authorized for fodder crops and grassland.

CHAPTER E

List of authorized organic complexing agents for trace elements

Definition of complexed trace elements:

Within the meaning of this Directive complexed trace elements are defined as combinations where the metal is present in the form of:

- a chelated product

- a complexed product

The following products are authorized in this Directive:

1. Chelating products:

Sodium, potassium or ammonium acid or salts of:

ethylene diamine tetraacetic acid	EDTA	$\mathrm{C_{10}H_{16}O_8N_2}$
diethylene triamine pentaacetic acid	DTPA	$C_{14}H_{23}O_{10}N_{3}$
ethylene diamine-di(0-hydroxyphenyl acetic) acid	EDDHA	$C_{18}H_{20}O_6N_2$
hydroxy-2 ethylene diamine triacetic acid	HEEDTA	$C_{10}H_{18}O_7N_2$
ethyldiamine-di(0-hydroxy-p-methyl phenyl)acetic	EDDHMA	C18H20N2O6
ethylene diamine-di(5-carboxy-2-hydroxyphenyl) acetic acid	EDDCHA	$C_{20}H_{20}O_{10}N_{2}$

2. Complexing products

Lignosulphates Protide hydrolysates