

**COMMISSION REGULATION (EU) 2023/1329****of 29 June 2023****amending Annex II to Regulation (EC) No 1333/2008 of the European Parliament and of the Council as regards the use of polyglycerol polyricinoleate (E 476) and the Annex to Commission Regulation (EU) No 231/2012 as regards specifications for glycerol (E 422), polyglycerol esters of fatty acids (E 475) and polyglycerol polyricinoleate (E 476)****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 1333/2008 of the European Parliament and of the Council of 16 December 2008 on food additives <sup>(1)</sup>, and in particular Article 10(3) and Article 14 thereof,

Having regard to Regulation (EC) No 1331/2008 of the European Parliament and of the Council of 16 December 2008 establishing a common authorisation procedure for food additives, food enzymes and food flavourings <sup>(2)</sup>, and in particular Article 7(5) thereof,

Whereas:

- (1) Annex II to Regulation (EC) No 1333/2008 lays down a Union list of food additives approved for use in foods and their conditions of use.
- (2) Commission Regulation (EU) No 231/2012 <sup>(3)</sup> lays down specifications for food additives that are listed in Annexes II and III to Regulation (EC) No 1333/2008.
- (3) The Union lists of food additives and the specifications may be updated in accordance with the common procedure referred to in Article 3(1) of Regulation (EC) No 1331/2008, either on the initiative of the Commission or following an application.
- (4) Glycerol (E 422), polyglycerol esters of fatty acids (E 475) and polyglycerol polyricinoleate (E 476) are substances authorised in accordance with Annexes II and III to Regulation (EC) No 1333/2008.
- (5) On 15 March 2017, the European Food Safety Authority ('the Authority') issued a scientific opinion on the re-evaluation of glycerol (E 422) as a food additive <sup>(4)</sup>, which concluded that there was no need for a numerical acceptable daily intake and that the food additive was of no safety concern for the reported uses. The Authority recommended some modifications to the specifications for E 422 set out in Regulation (EU) No 231/2012 and that more information on the uses and use levels is made available to the Authority.
- (6) On 23 November 2018, the Commission launched a public call for technical data on the food additive glycerol (E 422), targeting the data needs identified by the Authority.
- (7) Following the data submission by interested business operators, the Commission requested the Authority to provide a scientific opinion to confirm that the technical data provided by interested business operators adequately supported an amendment to the specifications for the food additive glycerol (E 422) to bring them in line with current standards, as recommended by the Authority.

<sup>(1)</sup> OJ L 354, 31.12.2008, p. 16.

<sup>(2)</sup> OJ L 354, 31.12.2008, p. 1.

<sup>(3)</sup> Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

<sup>(4)</sup> EFSA Journal 2017;15(3):4720.

- (8) In its scientific opinion adopted on 18 May 2022 <sup>(5)</sup>, the Authority concluded that the current specifications for glycerol (E 422) were to be adapted in particular by reducing the maximum limits for toxic elements (arsenic, lead, mercury and cadmium), by deleting the identification method based on acrolein formation during heating, by deleting the test for the presence of acrolein, by including a maximum limit for acrolein and by modifying the definition of glycerol (E 422).
- (9) It is therefore appropriate to amend the specifications for glycerol (E 422). The definition of the food additive should be amended to restrict it to the manufacturing processes for which data were assessed by the Authority. The current maximum limits for toxic elements should be reduced in accordance with the scientific opinion of the Authority, taking into account the currently achievable levels by the application of good manufacturing practices. The identification method for glycerol based on acrolein formation during heating should be deleted considering that the content of glycerol in E 422 is to be determined by an appropriate analytical method. The test for the presence of acrolein should be deleted and a maximum numerical limit for acrolein should be included in accordance with the scientific opinion of the Authority and taking into account the level which is currently achievable by the application of good manufacturing practices.
- (10) Considering that the Authority did not identify an immediate health concern linked to the presence of toxic elements and acrolein, it is appropriate to allow during a transitional period the use of the food additive glycerol (E 422) lawfully placed on the market before the date of the entry into force of this Regulation.
- (11) For the same reasons, it is appropriate that foods containing the food additive glycerol (E 422) that has been lawfully placed on the market before the date of entry into force of this Regulation may continue to be placed on the market during a transitional period and to remain on the market until their date of minimum durability or 'use-by-date'.
- (12) On 20 December 2017, the Authority issued a scientific opinion on the re-evaluation of polyglycerol esters of fatty acids (E 475) as a food additive <sup>(6)</sup>, which concluded that there was no need for a numerical acceptable daily intake and that the food additive was of no safety concern at the reported uses and use levels. The Authority recommended some modifications to the specifications for E 475 set out in Regulation (EU) No 231/2012.
- (13) On 23 November 2018, the Commission launched a public call for technical data on the food additive polyglycerol esters of fatty acids (E 475), targeting the data needs identified by the Authority.
- (14) Following the data submission by interested business operators, the Commission requested the Authority to provide a scientific opinion to confirm that the technical data provided by interested business operators adequately supported an amendment to the specifications for the food additive polyglycerol esters of fatty acids (E 475) to bring them in line with current standards, as recommended by the Authority.
- (15) In its scientific opinion adopted on 1 April 2022 <sup>(7)</sup>, the Authority concluded that the current specifications for polyglycerol esters of fatty acids (E 475) were to be adapted in particular by reducing the maximum limits for toxic elements, by including maximum limits for impurities and constituents of safety concern and by modifying the definition of polyglycerol esters of fatty acids (E 475).
- (16) It is therefore appropriate to amend the specifications for polyglycerol esters of fatty acids (E 475). The definition of the food additive should be amended in order to restrict the use of glycerol for the production of the food additive to glycerol compliant with the specifications for the food additive (E 422). The current maximum limits for toxic elements should be reduced and maximum limits for the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD), glycidyl fatty acid esters (expressed as glycidol) and erucic acid should be established in accordance with the scientific opinion of the Authority and taking into account the level which is currently achievable by the application of good manufacturing practices.

<sup>(5)</sup> EFSA Journal 2022;20(6):7353.

<sup>(6)</sup> EFSA Journal 2017;15(12):5089.

<sup>(7)</sup> EFSA Journal 2022;20(5):7308.

- (17) As new manufacturing techniques resulting in the production of the food additive polyglycerol esters of fatty acids (E 475) with lower levels of glycidyl fatty acid esters (expressed as glycidol) are being implemented, it is appropriate to provide the manufacturers of food additives with a transitional period to reach a maximum level of 5 mg/kg for glycidyl fatty acid esters (expressed as glycidol) in the food additive (E 475). However, given that glycidyl fatty acid esters are genotoxic and carcinogenic, an intermediate maximum level of 10 mg/kg for glycidyl fatty acid esters (expressed as glycidol) should apply from the date of entry into force of this Regulation.
- (18) Considering that the Authority did not identify an immediate health concern linked to the presence of toxic elements, 3-monochloropropanediol (3-MCPD), 3-MCPD fatty acid esters, erucic acid and glycidyl fatty acid esters, it is appropriate to allow during a transitional period the use of the food additive polyglycerol esters of fatty acids (E 475) lawfully placed on the market before the date of entry into force of this Regulation and to allow foods containing such food additive, to continue to be placed on the market for the same transitional period and to remain on the market until their date of minimum durability or 'use-by-date'.
- (19) For the same reasons and considering its reduced content of glycidyl fatty acid esters, the food additive polyglycerol esters of fatty acids (E 475) legally placed on the market after the date of entry into force of this Regulation and complying with the reduced intermediate maximum level for glycidyl fatty acid esters (expressed as glycidol) should be allowed to be used until the exhaustion of stocks and foods containing such food additive should be allowed to be placed on the market and to remain on the market until their date of minimum durability or 'use-by-date'.
- (20) On 24 March 2017, the Authority issued a scientific opinion on the re-evaluation of polyglycerol polyricinoleate (E 476) as a food additive <sup>(8)</sup>. The Authority concluded that the data set gave reason to increase the acceptable daily intake to 25 mg/kg bw per day. The Authority recommended some modifications to the specifications for E 476 set out in Regulation (EU) No 231/2012.
- (21) On 23 November 2018, the Commission launched a public call for technical data on the food additive polyglycerol polyricinoleate (E 476), targeting the data needs identified by the Authority.
- (22) On 18 March 2020, an application was submitted for the authorisation of the use of polyglycerol polyricinoleate (E 476) as an emulsifier in edible ices for fat and oil emulsion of water-in-oil type and emulsified sauces with a fat content of more than 20 %. The application was subsequently made available to the Member States by the Commission pursuant to Article 4 of Regulation (EC) No 1331/2008.
- (23) Polyglycerol polyricinoleate (E 476) is capable of producing stable water-in-oil emulsions with smaller droplet sizes that can be frozen to produce soft, creamy, edible ices requiring less energy in the manufacturing process and having enhanced stability in the frozen supply chain. It allows the use of low saturated fats and oils and lower amounts of sugars in edible ices. The level of polyglycerol polyricinoleate (E 476) needed to achieve the intended technological function is 4 000 mg/kg.
- (24) Polyglycerol polyricinoleate (E 476) also enables oil reduction in emulsified sauces (e.g. mayonnaise or salad dressings) without having the negative effect on mouthfeel. The currently authorised maximum level of 4 000 mg/kg is not sufficient for products with a fat content of more than 20 %. The level of use of polyglycerol polyricinoleate (E 476) needed to achieve the intended technological function in products with a fat content of more than 20 % is 8 000 mg/kg.
- (25) Following the data submission by interested business operators in response to the public call for technical data and the submission of the application on the extension of use of polyglycerol polyricinoleate (E 476), the Commission requested the Authority to provide a scientific opinion to confirm that the technical data provided by interested business operators adequately supported an amendment to the specifications for the food additive polyglycerol polyricinoleate (E 476) to bring them in line with current standards, as recommended by the Authority.

<sup>(8)</sup> EFSA Journal 2017;15(3):4743.

- (26) In its scientific opinion adopted on 30 March 2022 <sup>(9)</sup>, the Authority concluded that the proposed extension of use would not give rise to a safety concern. The Authority also concluded that the current specifications for polyglycerol polyricinoleate (E 476) were to be adapted in particular by reducing the maximum limits for toxic elements, by including maximum limits for impurities of safety concern and by modifying the definition of polyglycerol polyricinoleate (E 476).
- (27) It is therefore appropriate to authorise polyglycerol polyricinoleate (E 476) in food category 03 'Edible ices' at a maximum level of 4 000 mg/kg, increase the authorised maximum level in food category 12.6 'Sauces' to 8 000 mg/kg for emulsified sauces with a fat content of 20 % or more and amend its specifications in light of the Authority's scientific opinion. The definition of the food additive should be amended in order to restrict the use of glycerol for the production of the food additive to glycerol compliant with the specifications for the food additive (E 422). The current maximum limits for toxic elements should be reduced and maximum limits for the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD) and glycidyl fatty acid esters (expressed as glycidol) should be established in accordance with the scientific opinion of the Authority and taking into account the level which is currently achievable by the application of good manufacturing practices.
- (28) Considering that the Authority did not identify an immediate health concern linked to the presence of toxic elements, 3-monochloropropanediol (3-MCPD), 3-MCPD fatty acid esters and glycidyl fatty acid esters, it is appropriate to allow during a transitional period the use of the food additive polyglycerol polyricinoleate (E 476) lawfully placed on the market before the date of entry into force of this Regulation.
- (29) For the same reasons, it is appropriate that foods containing the food additive polyglycerol polyricinoleate (E 476) that has been lawfully placed on the market before the date of entry into force of this Regulation may continue to be placed on the market during a transitional period and to remain on the market until their date of minimum durability or 'use-by-date'.
- (30) Regulations (EC) No 1333/2008 and (EU) No 231/2012 should therefore be amended accordingly.
- (31) The measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Plants, Animals, Food and Feed,

HAS ADOPTED THIS REGULATION:

*Article 1*

Annex II to Regulation (EC) No 1333/2008 is amended in accordance with Annex I to this Regulation.

*Article 2*

The Annex to Regulation (EU) No 231/2012 is amended in accordance with Annex II to this Regulation.

*Article 3*

The food additive glycerol (E 422) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits for arsenic, lead, mercury, cadmium or acrolein applicable from 20 July 2023 may be added to food in accordance with Annexes II and III to Regulation (EC) No 1333/2008 until 20 January 2024.

Foods containing the food additive glycerol (E 422) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits for arsenic, lead, mercury, cadmium or acrolein applicable from 20 July 2023 may continue to be placed on the market until 20 January 2024 and may continue to be marketed until their date of minimum durability or 'use-by-date'.

<sup>(9)</sup> EFSA Journal 2022;20(5):7294.

The food additive polyglycerol esters of fatty acids (E 475) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits for arsenic, lead, mercury, cadmium, the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD), erucic acid or glycidyl fatty acids esters (expressed as glycidol) applicable from 20 July 2023 may be added to food in accordance with Annexes II and III to Regulation (EC) No 1333/2008 until 20 January 2024.

Foods containing the food additive polyglycerol esters of fatty acids (E 475) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits arsenic, lead, mercury, cadmium, the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD), erucic acid or for glycidyl fatty acids esters (expressed as glycidol) applicable from 20 July 2023 may continue to be placed on the market until 20 January 2024 and may continue to be marketed until their date of minimum durability or 'use-by date'.

The food additive polyglycerol esters of fatty acids (E 475) that has been lawfully placed on the market after 20 July 2023 and up to 20 January 2024 and that does not comply with the maximum limits for glycidyl fatty acids esters (expressed as glycidol) applicable from 20 January 2024 may be added to food in accordance with Annexes II and III to Regulation (EC) No 1333/2008 until the exhaustion of stocks.

Foods containing the food additive polyglycerol esters of fatty acids (E 475) that has been lawfully placed on the market after 20 July 2023 and up to 20 January 2024 and that does not comply with the maximum limits for glycidyl fatty acids esters (expressed as glycidol) applicable from 20 January 2024 may continue to be placed on the market and may continue to be marketed until their date of minimum durability or 'use by date'.

The food additive polyglycerol polyricinoleate (E 476) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits for arsenic, lead, mercury, cadmium, the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD) or glycidyl fatty acids esters (expressed as glycidol) applicable from 20 July 2023 may be added to food in accordance with Annexes II and III to Regulation (EC) No 1333/2008 until 20 January 2024.

Foods containing the food additive polyglycerol polyricinoleate (E 476) that has been lawfully placed on the market before 20 July 2023 and that does not comply with the maximum limits for arsenic, lead, mercury, cadmium, the sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD) or glycidyl fatty acids esters (expressed as glycidol) applicable from 20 July 2023 may continue to be placed on the market until 20 January 2024 and may continue to be marketed until their date of minimum durability or 'use-by date'.

#### Article 4

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 29 June 2023.

For the Commission  
The President  
Ursula VON DER LEYEN

## ANNEX I

Part E of Annex II to Regulation (EC) No 1333/2008 is amended as follows:

(1) in Category 03 (Edible ices), the following entry is inserted after the entry for E 473–474:

	E 476	Polyglycerol polyricinoleate	4 000		except sorbets'
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(2) in Category 12.6 (Sauces), the entry for E 476 (Polyglycerol polyricinoleate) is replaced by the following:

	E 476	Polyglycerol polyricinoleate	4 000		only emulsified sauces with a fat content of less than 20 %
	E 476	Polyglycerol polyricinoleate	8 000		only emulsified sauces with a fat content of 20 % or more'

## ANNEX II

The Annex to Regulation (EU) No 231/2012 is amended as follows:

(1) the entry for food additive E 422 Glycerol is replaced by the following:

<b>E 422 GLYCEROL</b>	
<b>Synonyms</b>	Glycerin; Glycerine
<b>Definition</b>	Glycerol is obtained only from vegetable oils and fats, either directly or from the crude glycerol obtained as a by-product of biodiesel production and undergoes purification processes that involve distillation, and other clean up steps to obtain refined glycerol.
Einecs	200-289-5
Chemical name	1,2,3-propanetriol; Glycerol; Trihydroxypropane
Chemical formula	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>
Molecular weight	92,10
Assay	Content not less than 98 % of glycerol on the anhydrous basis
<b>Description</b>	Clear, colourless hygroscopic syrupy liquid with not more than a slight characteristic odour, which is neither harsh nor disagreeable
<b>Identification</b>	
Specific gravity (25 °C/25 °C)	Not less than 1,257
Refractive index	[n] <sub>D</sub> <sup>20</sup> between 1,471 and 1,474
<b>Purity</b>	
Water content	Not more than 5 % (Karl Fischer method)
Sulphated ash	Not more than 0,01 % determined at 800 ± 25 °C
Butanetriols	Not more than 0,2 %
Acrolein	Not more than 3 mg/kg
Fatty acids and esters	Not more than 0,1 % calculated as butyric acid
Chlorinated compounds	Not more than 30 mg/kg (as chlorine)
3-Monochloropropane-1,2-diol (3- MCPD)	Not more than 0,1 mg/kg
Arsenic	Not more than 0,1 mg/kg
Lead	Not more than 0,1 mg/kg
Mercury	Not more than 0,1 mg/kg
Cadmium	Not more than 0,1 mg/kg'

(2) the entry for food additive E 475 Polyglycerol esters of fatty acids is replaced by the following:

**E 475 POLYGLYCEROL ESTERS OF FATTY ACIDS**

<b>Synonyms</b>	Polyglycerol fatty acid esters; Polyglycerin esters of fatty acid esters
<b>Definition</b>	Polyglycerol esters of fatty acids are produced by the esterification of polyglycerol with food fats and oils or with fatty acids occurring in foods fats and oils. The polyglycerol moiety is predominantly di-, tri- and tetraglycerol and contains not more than 10 % of polyglycerols equal to or higher than heptaglycerol. The polyglycerol is produced from glycerol complying with the specifications for E 422.
Einecs	
Chemical name	
Chemical formula	
Molecular weight	
Assay	Content of total fatty acid ester not less than 90 %
<b>Description</b>	Light yellow to amber, oily to very viscous liquids; light tan to medium brown, plastic or soft solids; and light tan to brown, hard, waxy solids
<b>Identification</b>	
Test for glycerol	Passes test
Test for polyglycerols	Passes test
Test for fatty acids	Passes test
Solubility	The esters range from very hydrophilic to very lipophilic, but as a class tend to be dispersible in water and soluble in organic solvents and oils
<b>Purity</b>	
Sulphated ash	Not more than 0,5 % (800 ± 25 °C)
Acids other than fatty acids	Less than 1 %
Free fatty acids	Not more than 6 % estimated as oleic acid
Total glycerol and polyglycerol	Not less than 18 % and not more than 60 %
Free glycerol and polyglycerol	Not more than 7 %
Arsenic	Not more than 0,1 mg/kg
Lead	Not more than 0,3 mg/kg
Mercury	Not more than 0,1 mg/kg



Cadmium	Not more than 0,1 mg/kg
Sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters, expressed as 3-MCPD	Not more than 2,5 mg/kg
Glycidyl fatty acid esters, expressed as glycidol	Not more than 10 mg/kg. This applies from 20 July 2023 until 20 January 2024. Not more than 5 mg/kg. This applies from 20 January 2024.
Erucic acid	Not more than 2 %

*Purity criteria apply to the additive free of sodium, potassium and calcium salts of fatty acids, however these substances may be present up to a maximum level of 6 % (expressed as sodium oleate).;*

(3) the entry for food additive E 476 Polyglycerol polyricinoleate is replaced by the following:

<b>E 476 POLYGLYCEROL POLYRICINOLEATE</b>	
<b>Synonyms</b>	Glycerol esters of condensed castor oil fatty acids; Polyglycerol esters of polycondensed fatty acids from castor oil; Polyglycerol esters of interesterified ricinoleic acid; PGPR
<b>Definition</b>	Polyglycerol polyricinoleate is prepared by the esterification of polyglycerol with condensed castor oil fatty acids. Castor oil used for the production of polyglycerol polyricinoleate is free of ricin. The polyglycerol is produced from glycerol complying with the specifications for E 422.
Einecs	
Chemical name	
Chemical formula	
Molecular weight	
Assay	
<b>Description</b>	Clear, highly viscous liquid
<b>Identification</b>	
Solubility	Insoluble in water and in ethanol; soluble in ether, hydrocarbons and halogenated hydrocarbons
Test for glycerol	Passes test
Test for polyglycerols	Passes test
Test for ricinoleic acid	Passes test
Refractive index	$[n]_D^{65}$ between 1,4630 and 1,4665
<b>Purity</b>	
Polyglycerols	The polyglycerol moiety shall be composed of not less than 75 % of di-, tri- and tetraglycerols and shall contain not more than 10 % of polyglycerols equal to or higher than heptaglycerol
Hydroxyl value	Not less than 80 and not more than 100

Acid value	Not more than 6
Arsenic	Not more than 0,1 mg/kg
Lead	Not more than 0,1 mg/kg
Mercury	Not more than 0,1 mg/kg
Cadmium	Not more than 0,1 mg/kg
Sum of 3-monochloropropanediol (3-MCPD) and 3-MCPD fatty acid esters (expressed as 3-MCPD)	Not more than 2,5 mg/kg
Glycidyl fatty acid esters (expressed as glycidol)	Not more than 1 mg/kg'