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(Acts whose publication is obligatory)

COMMISSION DIRECTIVE 2001/30/EC

of 2 May 2001

amending Directive 96/77/EC laying down specific purity criteria on food additives other than colours and sweeteners

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 89/107/EEC of 21 December 1988 on the approximation of the laws of the Member States concerning food additives authorised for use in foodstuffs intended for human consumption [1], as amended by Directive 94/34/EC of the European Parliament and of the Council [2] and in particular Article 3(3)(a) thereof,

After consulting Scientific Committee on Food,

Whereas:

(1) It is necessary to establish purity criteria for all additives other than colours and sweeteners mentioned in Directive 95/2/EC of the European Parliament and of the Council of 20 February 1995 on food additives other than colours and sweeteners [3], as last amended by Directive 2001/5/EC [4].

(2) Commission Directive 96/77/EC of 2 December 1996 laying down specific purity criteria on food additives other than colours and sweeteners [5], as last amended by Directive 2000/63/EC [6] set out purity criteria for a number of food additives. This Directive should now be completed with purity criteria for the remaining food additives mentioned in Directive 95/2/EC.

(3) It is necessary to take into account the specifications and analytical techniques for additives as set out in the *Codex Alimentarius* as drafted by the Joint FAO/WHO Expert Committee on Food Additives (JECFA).

(4) The measures provided for in this Directive are in accordance with the opinion of the Standing Committee for Foodstuffs,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Directive 96/77/EC is hereby amended as follows:

In the Annex, the text of the Annex to this Directive shall be added.

Article 2

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 1 June 2002 at the latest. They shall forthwith inform the Commission thereof.

2. When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

3. Products put on the market or labelled before 1 June 2002 which do not comply with this Directive may be marketed until stocks are exhausted.

Article 3

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

Article 4

This Directive is addressed to the Member States.

Done at Brussels, 2 May 2001.

For the Commission

David BYRNE

Member of the Commission

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[1] OJ L 40, 11.2.1989, p. 27.

[2] OJ L 237, 10.9.1994, p. 1.

[3] OJ L 61, 18.3.1995, p. 1.

[4] OJ L 55, 24.2.2001, p. 59.

[5] OJ L 339, 30.12.1996, p. 1.

[6] OJ L 227, 30.10.2000, p. 1.

ANNEX

E 170 (i) CALCIUM CARBONATE

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/45/EC laying down specific purity criteria concerning colours for use in foodstuffs [1].

[1] OJ L 226, 22.9.1995, p. 13.

E 353 METATARTARIC ACID

Synonyms	Ditartaric acid
Definition	
Chemical name	Metatartaric acid
Chemical formula	$C_4H_6O_6$
Assay	Not less than 99,5 %
Description	Crystalline or powder form with a white or yellowish colour. Very deliquescent with a faint odour of caramel
Identification	
A.	Very soluble in water and ethanol.
B.	Place a sample of 1 to 10 mg of this substance in a test tube with 2 ml of concentrated sulfuric acid and 2 drops of sulpho-resorcinol reagent. When heated to 150 °C, an intense violet coloration appears
Purity	
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 354 CALCIUM TARTRATE

Synonyms	L-Calcium tartrate
Definition	
Chemical name	Calcium L(+)-2,3-dihydroxybutanedioate di-hydrate
Chemical formula	$C_4H_4CaO_6 \cdot 2H_2O$
Molecular weight	224,18
Assay	Not less than 98,0 %
Description	Fine crystalline powder with a white or off-white colour
Identification	
A. Slightly soluble in water. Solubility approximately 0,01 g/100 ml water (20 °C). Sparingly soluble in ethanol. Slightly soluble in diethyl ether. Soluble in acids	

B. Specific rotation $[\alpha]^{20}_D$	+7,0° to +7,4° (0,1 % in a 1N de HCl solution)
C. pH of a 5 % slurry	Between 6,0 and 9,0
Purity	
Sulphates (as H_2SO_4)	Not more than 1 g/kg
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 356 SODIUM ADIPATE

Definition	
Chemical name	Sodium adipate
EINECS	231-293-5
Chemical formula	$C_6H_8Na_2O_4$
Molecular weight	190,11
Assay	Content not less than 99,0 % (on anhydrous basis)
Description	White odourless crystals or crystalline powder
Identification	
A. Melting range	151 °C-152 °C (for adipic acid)
B. Solubility	Approximately 50 g/100 ml water (20 °C)
C. Positive test for sodium	
Purity	
Water	Not more than 3 % (Karl Fischer)
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 357 POTASSIUM ADIPATE

Definition	
Chemical name	Potassium adipate
EINECS	242-838-1
Chemical formula	$C_6H_8K_2O_4$
Molecular weight	222,32
Assay	Content not less than 99,0 % (on anhydrous basis)
Description	White odourless crystals or crystalline powder

Identification	
A. Melting range	151 °C-152 °C (for adipic acid)
B. Solubility	Approximately 60 g/100 ml water (20 °C)
C. Positive test for potassium	
Purity	
Water	Not more than 3 % (Karl Fischer)
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 420(i) SORBITOL

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs [1].

E 420(ii) SORBITOL SYRUP

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 421 MANNITOL

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

[1] OJ L 178, 28.7.1995, p. 1.

E 425(i) KONJAC GUM

Definition	Konjac gum is a water-soluble hydrocolloid obtained from the Konjac flour by aqueous extraction. Konjac flour is the unpurified raw product from the root of the perennial plant *Amorphophallus konjac* The main component of Konjac gum is the water-soluble high-molecular-weight polysaccharide glucomannan, which consists of D-mannose and D-glucose units at a molar ration of 1,6:1,0, connected by β(1-4)-glycosidic bonds. Shorter side chains are attached through β(1-3)-glycosidic bonds, and acetyl groups occur at random at a ratio of about 1 group per 9 to 19 sugar units
Molecular weight	The main component, glucomannan, has an average molecular weight of 200 000 to 2 000 000
Assay	Not less than 75 % carbohydrate
Description	A white to cream to light tan powder

Identification	
A. Solubility	Dispersible in hot or cold water forming a highly viscous solution with a pH between 4,0 and 7,0
B. Gel formation	Add 5 ml of a 4 % sodium borate solution to a 1 % solution of the sample in a test tube, and shake vigorously. A gel forms
C. Formation of heat-stable gel	Prepare a 2 % solution of the sample by heating it in a boiling water bath for 30 min, with continuous agitation and then cooling the solution to room temperature. For each g of the sample used to prepare 30 g of the 2 % solution, add 1 ml of 10 % potassium carbonate solution to the fully hydrated sample at ambient temperature. Heat the mixture in a water bath to 85 °C, and maintain for 2 h without agitation. Under these conditions a thermally stable gel is formed
D. Viscosity (1 % solution)	Not less than 3 $kgm^{-1}s^{-1}$ at 25 °C
Purity	
Loss on drying	Not more than 12 % (105 °C, 5 h)
Starch	Not more than 3 %
Protein	Not more than 3 % (N × 5,7) Determine nitrogen by Kjeldahl method. The percentage of nitrogen in the sample multiplied by 5,7 gives the percent of protein in the sample
Ether-soluble material	Not more than 0,1 %
Total ash	Not more than 5,0 % (800 °C, 3 to 4h)
Arsenic	Not more than 3 mg/kg
Lead	Not more than 2 mg/kg
Salmonella spp.	Absent in 12,5 g
E. coli	Absent in 5 g

E 425(ii) KONJAC GLUCOMANNAN

Definition	Konjac glucomannan is a water-soluble hydrocolloid obtained from Konjac flour by washing with water-containing ethanol. Konjac flour is the unpurified raw product from the tuber of the perennial plant *Amorphophallus konjac*. The main component is the water-soluble high-molecular-weight polysaccharide glucomannan, which consists of D-mannose and D-glucose units at a molar ration of 1,6:1,0, connected by β(1-4)-glycosidic bonds with a branch at about each 50th or 60th unit. About each 19th sugar residue is acetylated
Molecular weight	500 000 to 2 000 000
Assay	Total dietary fibre: not less than 95 % on a dry weight basis
Description	White to slightly brownish fine particle size, free flowing and odourless powder
Identification	
A. Solubility	Dispersible in hot or cold water forming a highly viscous solution with a pH between 5,0 and 7,0. Solubility is increased by heat and mechanical agitation

B. Formation of heat-stable gel	Prepare a 2 % solution of the sample by heating it in a boiling water bath for 30 min, with continuous agitation and then cooling the solution to room temperature. For each g of the sample used to prepare 30 g of the 2 % solution, add 1 ml of 10 % potassium carbonate solution to the fully hydrated sample at ambient temperature. Heat the mixture in a water bath to 85 °C, and maintain for 2 h without agitation. Under these conditions a thermally stable gel is formed
C. Viscosity (1 % solution)	Not less than 20 $kgm^{-1}s^{-1}$ at 25 °C
Purity	
Loss on drying	Not more than 8 % (105 °C, 3h)
Starch	Not more than 1 %
Protein	Not more than 1,5 % (N × 5,7) Determine nitrogen by Kjeldahl method. The percentage of nitrogen in the sample multiplied by 5,7 gives the percent of protein in the sample
Ether-soluble material	Not more than 0,5 %
Sulphite (as SO_2)	Not more than 4 mg/kg
Chloride	Not more than 0,02 %
50 % Alcohol-soluble	Not more than 2,0 % material
Total ash	Not more than 2,0 % (800 °C, 3 to 4h)
Lead	Not more than 1 mg/kg
Salmonella spp.	Absent in 12,5 g
E. coli	Absent in 5 g

E 504(ii) MAGNESIUM HYDROXIDE CARBONATE

Synonyms	Magnesium hydrogen carbonate, magnesium subcarbonate (light or heavy), hydrated basic magnesium carbonate, magnesium carbonate hydroxide
Definition	
Chemical name	Magnesium carbonate hydroxide hydrated
EINECS	235-192-7
Chemical formula	$4MgCO_3Mg(OH)_25H_2O$
Molecular weight	485
Assay	Mg content not less than 40,0 % and not more than 45,0 % calculated as MgO
Description	Light, white friable mass or bulky white powder
Identification	
A. Positive tests for magnesium and for carbonate	
B. Solubility	Practically insoluble in water. Insoluble in ethanol

Purity	
Acid insoluble matter	Not more than 0,05 %
Water soluble matter	Not more than 1,0 %
Calcium	Not more than 1,0 %
Arsenic	Not more than 3 mg/kg
Lead	Not more than 10 mg/kg
Mercury	Not more than 1 mg/kg

E 553b TALC

Synonyms	Talcum
Definition	Naturally occurring form of hydrous magnesium silicate containing varying proportions of such associated minerals as alpha-quartz, calcite, chlorite, dolomite, magnesite, and phlogopite
Chemical name	Magnesium hydrogen metasilicate
EINECS	238-877-9
Chemical formula	$Mg_3(Si_4O_{10})(OH)_2$
Molecular weight	379,22
Description	Light, homogeneous, white or almost white powder, greasy to the touch
Identification	
A. IR absorption	Characteristic peaks at 3 677, 1 018 and 669 cm^{-1}
B. X-ray diffraction	Peaks at 9,34 / 4,66 / 3,12 Å
C. Solubility	Insoluble in water and ethanol
Purity	
Loss on drying	Not more than 0,5 % (105 °C, 1h)
Acid-soluble matter	Not more than 6 %
Water-soluble matter	Not more than 0,2 %
Acid-soluble iron	Not detectable
Arsenic	Not more than 10 mg/kg
Lead	Not more than 5 mg/kg

E 554 SODIUM ALUMINIUM SILICATE

Synonyms	Sodium silicoaluminate, sodium aluminosilicate, aluminium sodium silicate

Definition	
Chemical name	Sodium aluminium silicate
Assay	Content on the anhydrous basis: — as SiO_2 not less than 66,0 % and not more than 88,0 % — as Al_2O_3 not less than 5,0 % and not more than 15,0 %
Description	Fine white amorphous powder or beads
Identification	
A. Positive tests for sodium, for aluminium and for silicate	
B. pH of a 5 % slurry	Between 6,5 and 11,5
Purity	
Loss on drying	Not more than 8,0 % (105 °C, 2h)
Loss on ignition	Not less than 5,0 % and not more than 11,0 % on the anhydrous basis (1 000 °C, constant weight)
Sodium	Not less than 5 % and not more than 8,5 % (as Na_2O) on the anhydrous basis
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 555 POTASSIUM ALUMINIUM SILICATE

Synonyms	Mica
Definition	Natural mica consists of mainly potassium aluminium silicate (muscovite)
EINECS	310-127-6
Chemical name	Potassium aluminium silicate
Chemical formulae	$KAl_2[AlSi_3O_{10}](OH)_2$
Molecular weight	398
Assay	Content not less than 98 %
Description	Light grey to white crystalline platelets or powder
Identification	
A. Solubility	Insoluble in water, diluted acids and alkali and organic solvents
Purity	
Loss on drying	Not more than 0,5 % (105 °C, 2h)
Antimony	Not more than 20 mg/kg
Zinc	Not more than 25 mg/kg

Barium	Not more than 25 mg/kg
Chromium	Not more than 100 mg/kg
Copper	Not more than 25 mg/kg
Nickel	Not more than 50 mg/kg
Arsenic	Not more than 3 mg/kg
Mercury	Not more than 1 mg/kg
Cadmium	Not more than 2 mg/kg
Lead	Not more than 10 mg/kg

E 556 CALCIUM ALUMINIUM SILICATE

Synonyms	Calcium aluminosilicate, calcium silicoaluminate, aluminium calcium silicate
Definition	
Chemical name	Calcium aluminium silicate
Assay	Content on the anhydrous basis: — as SiO_2 not less than 44,0 % and not more than 50,0 % — as Al_2O_3 not less than 3,0 % and not more than 5,0 % — as CaO not less than 32,0 % and not more than 38,0 %
Description	Fine white, free-flowing powder
Identification	
A. Positive tests for calcium, for aluminium and for silicate	
Purity	
Loss on drying	Not more than 10,0 % (105 °C, 2h)
Loss on ignition	Not less than 14,0 % and not more than 18,0 on the anhydrous basis (1 000 °C, constant weight)
Fluoride	Not more than 50 mg/kg
Arsenic	Not more than 3 mg/kg
Lead	Not more than 10 mg/kg
Mercury	Not more than 1 mg/kg

E 558 BENTONITE

Definition	Bentonite is a natural clay containing a high proportion of montmorillonite, a native hydrated aluminium silicate in which some aluminium and silicon atoms were naturally replaced by other atoms such as magnesium and iron. Calcium and sodium ions are trapped between the mineral layers. There are four common types of bentonite: natural sodium bentonite, natural calcium bentonite, sodium-activated bentonite and acid-activated bentonite

EINECS	215-108-5
Chemical formula	$(Al, Mg)_8(Si_4O_{10})_4(OH)_8 \cdot 12H_2O$
Molecular weight	819
Assay	Montmorillonite content not less than 80 %
Description	Very fine, yellowish or greyish white powder or granules. The structure of bentonite allows it to absorb water in its structure and on its external surface (swelling properties)
Identification	
A. Methylene blue test	
B. X-Ray diffraction	Characteristic peaks at 12,5/15 A
C. IR absorption	Peaks at 428/470/530/1 110-1 020/3 750 — 3 400 cm^{-1}
Purity	
Loss on drying	Not more than 15,0 % (105 °C, 2h)
Arsenic	Not more than 2 mg/kg
Lead	Not more than 20 mg/kg

E 559 ALUMINIUM SILICATE (KAOLIN)

Synonyms	Kaolin, light or heavy
Definition	Aluminium silicate hydrous (kaolin) is a purified white plastic clay composed of kaolinite, potassium aluminium silicate, feldspar and quartz. Processing should not include calcination
EINECS	215-286-4 (kaolinite)
Chemical formula	$Al_2Si_2O_5(OH)_4$ (kaolinite)
Molecular weight	264
Assay	Content not less than 90 % (sum of silica and alumina, after ignition) Silica (SiO_2) Between 45 % and 55 % Alumina (Al_2O_3) Between 30 % and 39 %
Description	Fine, white or greyish white, unctuous powder. Kaolin is made up of loose aggregations of randomly oriented stacks of kaolinite flakes or of individual hexagonal flakes
Identification	
A. Positive tests for alumina and for silicate	
B. X-ray diffraction:	characteristic peaks at 7,18 / 3,58 / 2,38 / 1,78 Å
C. IR absorption:	peaks at 3 700 and 3 620 cm^{-1}

Purity	
Loss on ignition	Between 10 and 14 % (1 000 °C, constant weight)
Water soluble matter	Not more than 0,3 %
Acid soluble matter	Not more than 2,0 %
Iron	Not more than 5 %
Potassium oxide (K_2O)	Not more than 5 %
Carbon	Not more than 0,5 %
Arsenic	Not more than 3 mg/kg
Lead	Not more than 5 mg/kg
Mercury	Not more than 1 mg/kg

E 620 GLUTAMIC ACID

Synonyms	L-Glutamic acid, L-α-aminoglutaric acid
Definition	
Chemical name	L-Glutamic acid, L-2-amino-pentanedioic acid
EINECS	200-293-7
Chemical formula	$C_5H_9NO_4$
Molecular weight	147,13
Assay	Content not less than 99,0 % and not more than 101,0 % on the anhydrous basis
Description	White crystals or crystalline powder
Identification	
A. Positive test for glutamic acid by thin layer chromatography	
B. Specific rotation $[\alpha]_D^{20}$	Between + 31,5° and + 32,2° (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
C. pH of a saturated solution	Between 3,0 and 3,5
Purity	
Loss on drying	Not more than 0,2 % (80 °C, 3h)
Sulphated ash	Not more than 0,2 %
Chloride	Not more than 0,2 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 621 MONOSODIUM GLUTAMATE

Synonyms	Sodium glutamate, MSG
Definition	
Chemical name	Monosodium L-glutamate monohydrate
EINECS	205-538-1
Chemical formula	$C_5H_8NaNO_4 \cdot H_2O$
Molecular weight	187,13
Assay	Content not less than 99,0 % and not more than 101,0 % on the anhydrous basis
Description	White, practically odourless crystals or crystalline powder
Identification	
A. Positive test for sodium	
B. Positive test for glutamic acid by thin-layer chromatography	
C. Specific rotation $[\alpha]_D^{20}$	Between + 24,8° and + 25,3° (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
D. pH of a 5 % solution	Between 6,7 and 7,2
Purity	
Loss on drying	Not more than 0,5 % (98 °C, 5h)
Chloride	Not more than 0,2 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 622 MONOPOTASSIUM GLUTAMATE

Synonyms	Potassium glutamate, MPG
Definition	
Chemical name	Monopotassium L-glutamate monohydrate
EINECS	243-094-0
Chemical formula	$C_5H_8KNO_4 \cdot H_2O$
Molecular weight	203,24
Assay	Content not less than 99,0 % and not more than 101,0 % on the anhydrous basis
Description	White, practically odourless crystals or crystalline powder

Identification	
A. Positive test for potassium	
B. Positive test for glutamic acid by thin-layer chromatography	
C. Specific rotation $[\alpha]_D^{20}$	Between + 22,5° and + 24,0° (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
D. pH of a 2 % solution	Between 6,7 and 7,3
Purity	
Loss on drying	Not more than 0,2 % (80 °C, 5h)
Chloride	Not more than 0,2 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 623 CALCIUM DIGLUTAMATE

Synonyms	Calcium glutamate
Definition	
Chemical name	Monocalcium di-L-glutamate
EINECS	242-905-5
Chemical formula	$C_{10}H_{16}CaN_2O_8 \cdot x\ H_2O$ (x = 0, 1, 2 or 4)
Molecular weight	332,32 (anhydrous)
Assay	Content not less than 98,0 % and not more than 102,0 % on the anhydrous basis
Description	White, practically odourless crystals or crystalline powder
Identification	
A. Positive test for calcium	
B. Positive test for glutamic acid by thin-layer chromatography	
C. Specific rotation $[\alpha]_D^{20}$	Between + 27,4 and + 29,2 (for calcium diglutamate with x = 4) (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
Purity	
Water	Not more than 19,0 % (for calcium diglutamate with x = 4) (Karl Fischer)
Chloride	Not more than 0,2 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 624 MONOAMMONIUM GLUTAMATE

Synonyms	Ammonium glutamate
Definition	
Chemical name	Monoammonium L-glutamate monohydrate
EINECS	231-447-1
Chemical formula	$C_5H_{12}N_2O_4 \cdot H_2O$
Molecular weight	182,18
Assay	Content not less than 99,0 % and not more 101,0 % on the anhydrous basis
Description	White, practically odourless crystals or crystalline powder
Identification	
A. Positive test for ammonium	
B. Positive test for glutamic acid by thin-layer chromatography	
C. Specific rotation $[\alpha]_D^{20}$	Between + 25,4° and + 26,4° (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
D. pH of a 5 % solution	Between 6,0 and 7,0
Purity	
Loss on drying	Not more than 0,5 % (50 °C, 4h)
Sulphated ash	Not more than 0,1 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 625 MAGNESIUM DIGLUTAMATE

Synonyms	Magnesium glutamate
Definition	
Chemical name	Monomagnesium di-L-glutamate tetrahydrate
EINECS	242-413-0
Chemical formula	$C_{10}H_{16}MgN_2O_8 \cdot 4H_2O$
Molecular weight	388,62
Assay	Content not less than 95,0 % and not more than 105,0 % on the anhydrous basis
Description	Odourless, white or off-white crystals or powder

Identification	
A. Positive test for magnesium	
B. Positive test for glutamic acid by thin-layer chromatography	
C. Specific rotation $[\alpha]_D^{20}$	Between + 23,8° and + 24,4° (10 % solution (anhydrous basis) in 2N HCl, 200 mm tube)
D. pH of a 10 % solution	Between 6,4 and 7,5
Purity	
Water	Not more than 24 % (Karl Fischer)
Chloride	Not more than 0,2 %
Pyrrolidone carboxylic acid	Not more than 0,2 %
Lead	Not more than 2 mg/kg

E 626 GUANYLIC ACID

Synonyms	Guanylic acid
Definition	
Chemical name	Guanosine-5'-monophosphoric acid
EINECS	201-598-8
Chemical formula	$C_{10}H_{14}N_5O_8P$
Molecular weight	363,22
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or white crystalline powder
Identification	
A. Positive test for ribose and for organic phosphate	
B. pH of a 0,25 % solution	Between 1,5 and 2,5
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 256 nm
Purity	
Loss on drying	Not more than 1,5 % (120 °C, 4h)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 627 DISODIUM GUANYLATE

Synonyms	Sodium guanylate, sodium 5'-guanylate

Definition	
Chemical name	Disodium guanosine-5'-monophosphate
EINECS	221-849-5
Chemical formula	$C_{10}H_{12}N_5Na_2O_8P \cdot x\ H_2O$ (x = ca. 7)
Molecular weight	407,19 (anhydrous)
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or white crystalline powder
Identification	
A. Positive test for ribose, for organic phosphate, and for sodium	
B. pH of a 5 % solution	Between 7,0 and 8,5
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 256 nm
Purity	
Loss on drying	Not more than 25 % (120 °C, 4h)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 628 DIPOTASSIUM GUANYLATE

Synonyms	Potassium guanylate, potassium 5'-guanylate
Definition	
Chemical name	Dipotassium guanosine-5'-monophosphate
EINECS	226-914-1
Chemical formula	$C_{10}H_{12}K_2N_5O_8P$
Molecular weight	439,40
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or white crystalline powder
Identification	
A. Positive test for ribose, for organic phosphate, and for potassium	
B. pH of a 5 % solution	Between 7,0 and 8,5
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 256 nm
Purity	
Loss on drying	Not more than 5 % (120 °C, 4h)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 629 CALCIUM GUANYLATE

Synonyms	Calcium 5'-guanylate
Definition	
Chemical name	Calcium guanosine-5'-monophosphate
Chemical formula	$C_{10}H_{12}CaN_5O_8P \cdot nH_2O$
Molecular weight	401,20 (anhydrous)
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, white or off-white crystals or powder
Identification	
A. Positive test for ribose, for organic phosphate, and for calcium	
B. pH of a 0,05 % solution	Between 7,0 and 8,0
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 256 nm
Purity	
Loss on drying	Not more than 23,0 % (120 °C, 4h)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 630 INOSINIC ACID

Synonyms	5'-Inosinic acid
Definition	
Chemical name	Inosine-5'-monophosphoric acid
EINECS	205-045-1
Chemical formula	$C_{10}H_{13}N_4O_8P$
Molecular weight	348,21
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or powder
Identification	
A. Positive test for ribose, and for organic phosphate	
B. pH of a 5 % solution	Between 1,0 and 2,0
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 250 nm

Purity	
Loss on drying	Not more than 3,0 % (120 °C, 4h)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 631 DISODIUM INOSINATE

Synonyms	Sodium inosinate, sodium 5'-inosinate
Definition	
Chemical name	Disodium inosine-5'-monophosphate
EINECS	225-146-4
Chemical formula	$C_{10}H_{11}N_4Na_2O_8P \cdot H_2O$
Molecular weight	392,17 (anhydrous)
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or powder
Identification	
A. Positive test for ribose, and for organic phosphate and for sodium	
B. pH of a 5 % solution	Between 7,0 and 8,5
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 250 nm
Purity	
Water	Not more than 28,5 % (Karl Fischer)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 632 DIPOTASSIUM INOSINATE

Synonyms	Potassium inosinate, potassium 5'-inosinate
Definition	
Chemical name	Dipotassium inosine-5'-monophosphate
EINECS	243-652-3
Chemical formula	$C_{10}H_{11}K_2N_4O_8P$
Molecular weight	424,39
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or powder

Identification	
A. Positive test for ribose, and for organic phosphate and for potassium	
B. pH of a 5 % solution	Between 7,0 and 8,5
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 250 nm
Purity	
Water	Not more than 10,0 % (Karl Fischer)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 633 CALCIUM INOSINATE

Synonyms	Calcium 5'-inosinate
Definition	
Chemical name	Calcium inosine-5'-monophosphate
Chemical formula	$C_{10}H_{11}CaN_4O_8P \cdot nH_2O$
Molecular weight	386,19 (anhydrous)
Assay	Content not less than 97,0 % on the anhydrous basis
Description	Odourless, colourless or white crystals or powder
Identification	
A. Positive test for ribose, and for organic phosphate and for calcium	
B. pH of a 0,05 % solution	Between 7,0 and 8,0
C. Spectrometry:	maximum absorption of a 20 mg/l solution in 0,01N HCl at 250 nm
Purity	
Water	Not more than 23,0 % (Karl Fischer)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 634 CALCIUM 5'-RIBONUCLEOTIDE

Definition	
Chemical name	Calcium 5'-ribonucleotide is essentially a mixture of calcium inosine-5'-monophosphate and calcium guanosine-5'-monophosphate
Chemical formula	$C_{10}H_{11}N_4CaO_8P \cdot nH_2O$ y $C_{10}H_{12}N_5CaO_8P \cdot nH_2O$

Assay	Content of both major components not less than 97,0 %, and of each component not less than 47,0 % and not more than 53 %, in every case on the anhydrous basis
Description	Odourless, white or nearly white crystals or powder
Identification	
A. Positive test for ribose, and for organic phosphate and for calcium	
B. pH of a 0,05 % solution	Between 7,0 and 8,0
Purity	
Water	Not more than 23,0 % (Karl Fischer)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 635 DISODIUM 5'-RIBONUCLEOTIDE

Synonyms	Sodium 5'-ribonucleotide
Definition	
Chemical name	Disodium 5'-ribonucleotide is essentially a mixture of disodium inosine-5'-monophosphate and disodium guanosine-5'-monophosphate
Chemical formula	$C_{10}H_{11}N_4O_8P \cdot nH_2O$ and $C_{10}H_{12}N_5Na_2O_8P \cdot nH_2O$
Assay	Content of both major components not less than 97,0 %, and of each component not less than 47,0 % and not more than 53 %, in every case on the anhydrous basis
Description	Odourless, white or nearly white crystals or powder
Identification	
A. Positive test for ribose, and for organic phosphate and for sodium	
B. pH of a 5 % solution	Between 7,0 and 8,5
Purity	
Water	Not more than 26,0 % (Karl Fischer)
Other nucleotides	Not detectable by thin-layer chromatography
Lead	Not more than 2 mg/kg

E 905 MICROCRYSTALLINE WAX

Synonyms	Petroleum wax
Definition	Microcrystalline wax is a refined mixture of solid, saturated hydrocarbons, mainly branched paraffin, obtained from petroleum
Description	White to amber, odourless wax

Identification	
A. Solubility	Insoluble in water, very slightly soluble in ethanol
B. Refractive Index	n_D^{100} 1,434-1,448
Purity	
Molecular weight	Average not less than 500
Viscosity at 100 °C	Not less than $1,1 \cdot 10^{-5}$ m^2s^{-1}
Residue on ignition	Not more than 0,1 %
Carbon number at 5 % distillation point	Not more than 5 % of molecules with carbon number less than 25
Colour	Passes test
Sulphur	Not more than 0,4 %
Arsenic	Not more than 3 mg/kg
Lead	Not more than 3 mg/kg
Polycyclic aromatic compounds	The polycyclic aromatic hydrocarbons, obtained by extraction with dimethyl sulfoxide, shall meet the following ultraviolet absorbency limits:

nm	Maximum absorbance per cm path length
280-289	0,15
290-299	0,12
300-359	0,08
360-400	0,02

E 912 MONTAN ACID ESTERS

Definition	Montan acids and/or esters with ethylene glycol and/or 1,3-butanediol and/or glycerol
Chemical name	Montan acid esters
Description	Almost white to yellowish flakes, powder, granules or pellets
Identification	
A. Density (20 °C)	Between 0,98 and 1,05
B. Drop point	Greater than 77 °C
Purity	
Acid value	Not more than 40
Glycerol	Not more than 1 % (by gas chromatography)
Other polyols	Not more than 1 % (by gas chromatography)

Other wax types	Not detectable (by differential scanning calorimetry and/or infrared spectroscopy)
Arsenic	Not more than 2 mg/kg
Chromium	Not more than 3 mg/kg
Lead	Not more than 2 mg/kg

E 914 OXIDISED POLYETHYLENE WAX

Definition	Polar reaction products from mild oxidation of polyethylene
Chemical name	Oxidised polyethylene
Description	Almost white flakes, powder, granules or pellets
Identification	
A. Density (20 °C)	Between 0,92 and 1,05
B. Drop point	Greater than 95 °C
Purity	
Acid value	Not more than 70
Viscosity at 120 °C	Not less than $8{,}1 \cdot 10^{-5}$ m^2s^{-1}
Other wax types	Not detectable (by differential scanning calorimetry and/or infrared spectroscopy)
Oxygen	Not more than 9,5 %
Chromium	Not more than 5 mg/kg
Lead	Not more than 2 mg/kg

E 950 ACESULFAME K

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 951 ASPARTAME

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 953 ISOMALT

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC, as amended by Directive 98/66/EC, laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 957 THAUMATIN

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 959 NEOHESPERIDINE DIHYDROCHALCONE

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 965(i) MALTITOL

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 965(ii) MALTITOL SYRUP

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 966 LACTITOL

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.

E 967 XYLITOL

Purity criteria for this additive are the same as set out for this additive in the Annex to Directive 95/31/EC laying down specific criteria of purity concerning sweeteners for use in foodstuffs.