474/2000 Coll.

DECREE of the Ministry of Agriculture dated 13 December 2000

on the specification of requirements for fertilizers

The Ministry of Agriculture hereby lays down the following Decree pursuant to Section 3 para 5 and Section 16 letter b) of Act No. 156/1998 Coll. on fertilizers, supplementary soil substances, supplementary plant preparations and substrates and on agrochemical testing of agricultural land (Act on Fertilizers), in the wording of Act No. 308/2000 Coll.:

Section 1

Hazardous elements and the limiting values thereof in fertilizers, supplementary soil substances, supplementary plant preparations and substrates and permissible deviations

1) The limiting values of hazardous elements in fertilizers, supplementary soil substances, supplementary plant preparations and substrates are stipulated in Appendix 1.

2) The permissible deviations from the chemical and physical properties of fertilizers and the permissible deviations from the values and contents of individual fertilizer components are stipulated in Appendix 2.

3) The permissible deviations specified in Appendix 2 represent deviation between the measured and the declared nutrition content and cannot be applied if the nutrition content is specified in Appendix 3 or stipulated as minimum or maximum value in the fertilizer labelling. Unless a maximum value is specified, the measured nutrition content values may exceed the allowable deviation.

Section 2 Fertilizer Types

The fertilizer types are stipulated in Appendix 3.

Section 3

Labelling of fertilizers, supplementary soil substances, supplementary plant preparations and substrates

1) Packaged fertilizers, supplementary soil substances, supplementary plant preparations and substrates put into circulation shall have a label on the package or attached to the package; should the package weight exceed 100 kg, labelling may only be included in the documentation relevant therefore.
2) The designation of nutrient content is stipulated in Appendix 4; it is expressed both in words and chemical symbols.
3) The nutrient content for straight fertilizers must be specified in the fertilizer's label as a percentage of weight either in whole numbers or numbers with one decimal place; for compound fertilizers the order shall be: N, P2O5 (P), K2O (K).
4) The forms and solubilities of nutrients shall be shown in the fertilizer's label in weight percentage, unless Appendix 3 specifies otherwise.
5) The weight or volume given in the labelling of the package or of the fertilizer delivered shall be a net weight or net volume of the fertilizer.

Section 4 Packaging of Fertilizers

1) Fertilizers corresponding to a type stipulated in Appendix 3 shall be placed on the market only packaged, if so stated in column 7 of this Appendix.

2) The package shall not have an adverse effect on the properties of fertilizers, supplementary soil substances, supplementary plant preparations and substrates; the packages shall be sealed in such a manner that once opened, the package or its cap is damaged beyond repair.

Section 5

Repealing Provisions Decree No. 271/1998 Coll., on the specification of requirements for fertilizers is hereby repealed.

Section 6 Applicability:

This Decree applies since 1 January 2001.

Minister: Ing. Fencl by own hand

Limit values of hazardous elements in fertilizers, supplementary soil substances, supplementary plant preparations and substrates

1. **Mineral fertilizers, supplementary soil substances, supplementary plant preparations**

a) mineral fertilizers with a phosphorous component in which the weight fraction of total phosphorus as P_2O_5 is 5% or more:

mg per kg P2O5	mg per kg of fertilizer			
cadmium	lead	mercury	arsenic	chromium
50	**15**	**1,0**	**20**	**150**

b) mineral fertilizers with a phosphorous component in which the weight fraction of total phosphorus as P2O5 is below 5%, other mineral fertilizers not containing phosphorus, supplementary soil substances, supplementary plant preparations:

mg per kg of fertilizer, supplementary soil substances, supplementary plant preparations:				
cadmium	lead	mercury	arsenic	chromium
1[1)]	**10**	**1,0**	**20**	**50**

c) calcium and magnesium-calcium mineral fertilizers:

mg per kg of fertilizer				
cadmium	lead	mercury	arsenic	chromium
1,5	**30**	**0,5**	**20**	**50**

d) ash from separate biomass combustion:

mg per kg of dry matter					
cadmium	lead	mercury	arsenic	chromium	PAH[4)]
5	**50**	**0,5**	**20**	**50**	**20**

2. **Organic fertilizers, substrates, farm fertilizers**

a) substrates:

mg per kg of dry matter								
cadmium	lead	mercury	arsenic	chromium	copper	molybdenum	nickel	zinc
2[1]	**100**	**1,0**	**20**	**100**	**100**	**5**[2]	**50**	**300**

b) organic and farm fertilizers with dry matter at least 13%:

mg per kg of dry matter								
cadmium	lead	mercury	arsenic	chromium	copper	molybdenum	nickel	zinc
2	**100**	**1,0**	**20**	**100**	**150**	**20**	**50**	**600**

c) organic and farm fertilizers with dry matter below 13%:

mg per kg of dry matter								
cadmium	lead	mercury	arsenic	chromium	copper	molybdenum	nickel	zinc
2	**100**	**1,0**	**20**	**100**	**250**	**20**	**50**	**1200**

d) organic fertilizers and substrates for the production of which wastes from sewage treatment plants were used:

[1)] 5 mg per kg at fertilizers containinc zinc only as the type defining component
[2)] 1 mg per kg for substrates intended for production of vegetables and fruit.
[3)] not for substrates used in horticulture except for those used for production of vegetables and fruit
[4)] PAH - polycyclic aromatic hydrocarbons (sum of anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene, phenanthrene, fluoranthene, chrysene, indeno(1,2,3 cd)pyrene, naphthalene and pyrene)
[5)] CFU – colonies forming units

Permissible amount of micro-organisms (CFU [5]))		
Salmonella sp.	Escherichia coli or Enterococcaceae (in 1 g - 5 tested samples)	
negative	4 samples	1 sample
	10^3	5×10^3

Methods of sampling and microbiological analysis will be performed according to the principles of AHEM 7/2001 and AHEM 1/2008.

3. **Organo-mineral fertilizers**

Limits for mineral fertilizers or for organic fertilizers are applicable to organic mineral fertilizers according to the fertilizer composition and the method of its application.

Annex 2 to Decree No. 474/2000 S.B.

Permissible tolerances

1. Mineral straight fertilizers
a) nitrogen fertilizers

	absolute value of permissible tolerance in weight %	
	N	MgO
calcium magnesium saltpetre	0.4	0.9
calcium saltpetre, sodium nitrate, Chile saltpetre	0.4	
ammonium sulphate	0.3	
ammonium nitrate with ammonium sulphate and magnesium sulphate	0.8	0.9
ammonium saltpetre	0.8	
ammonium nitrate	0.6	
mixture of ammonium sulphate with ammonium nitrate	0.8	
nitrogenous lime, nitrogenous lime with nitrate	1.0	
urea	0.4	
urea with ammonium sulphate	0.5	
liquid nitrogen fertilizers, liquid ammoniac	0.6	
solution of ammonium nitrate with urea	0.6	
calcium saltpetre - suspension	0.4	
solution nitrogen fertilizers with urea-formaldehyde	0.4	
suspension nitrogen fertilizers with urea-formaldehyde	0.4	

If more than one nitrogen form must be specified on the label, the permissible tolerance for the content of each nitrogen form is equal to one tenth of the total nitrogen content in the fertilizer, at most 2% of the weight. The tolerance prescribed for the total content of the nutrient may not be exceeded.

b) phosphatic fertilizers

	absolute value of permissible tolerance in weight %	
	P_2O_5	water-soluble portion of P_2O_5
superphosphate, enriched superphosphate	0.8	0.9
triple superphosphate	0.8	1.3
dicalcium phosphate, calcinated phosphate	0.8	
Thomas slag	1.0	
raw phosphate, partially enriched	0.8	0.9
aluminium calcium phosphate	0.8	
natural soft phosphorite	0.8	

If more than one phosphate solubility must be specified on the label, the permissible tolerance for the content of each phosphate solubility is equal to one tenth of the total phosphate content in the fertilizer, at most 2% of the weight. This clause does not apply to the portion of water-soluble P_2O_5 that is to be specified. The tolerance prescribed for the total content of the nutrient may not be exceeded.

c) potassium fertilizers

	absolute value of permissible tolerance in weight %	
	K_2O	MgO
raw potassium salt (kainite)	1.5	0.9
enriched raw potassium salt	1.0	0.9
potassium chloride up to 55% of K_2O	1.0	
potassium chloride above 55% of K_2O	0.5	
potassium chloride with magnesium	1.5	0.9
potassium sulphate	0.5	
potassium sulphate with magnesium	1.5	0.9
kieserite with potassium sulphate	1.0	0.9

d) fertilizers with calcium, magnesium and sulphur (fertilizers with secondary nutrients)

	Ca	Mg	MgO	S
calcium chloride - solution	0.6			
magnesium sulphate			0.9	1.0
kieserite			0.9	1.0
magnesium chloride - solution		0.5		
elemental sulphur				1.0
calcium sulphate	0.6			1.0

2. Mineral compound fertilizers

a) for individual nutrient nitrogen

	1.1	N
diphosphorus pentaoxide	1.1	P_2O_5
potassium oxide	1.1	K_2O

b) negative deviations from the given total nutrient content at most:

NP fertilizer	1.5	
NK fertilizer	1.5	
PK fertilizer	1.5	
NPK fertilizer	1.9	
at NPK, NP, NK and PK fertilizers with magnesium for magnesium	0.9	MgO
at NPK, NP, NK and PK fertilizers with calcium carbonate for calcium	3.0	$CaCO_3$

c) for contents of nitrogen forms and phosphate solubilities the permissible tolerance is equal to one tenth of the total nutrient content in the fertilizer, always according to the nutrient form or the nutrient solubility, at most 2% of the weight. Tolerances for individual nutrients and for the total nutrient content may not be exceeded.

d) for chloride	0.2	Cl-

3. Fertilizers with trace nutrients

	absolute value of permissible tolerance in weight %
content of trace nutrients above 2%	0.4
content of trace nutrients up to 2%	one fifth of the content specified

3. Mineral non-type fertilizers (straight, compound) absolute value of tolerance in weight %

	liquid	solid
N	10 % from declared content	15 % from declared content
P_2O_5	10 % from declared content	15 % from declared content
K_2O	10 % from declared content	15 % from declared content
CaO	25 % from declared content, max. 0.9 %	
MgO	25 % from declared content, max. 0.9 %	
S	25 % from declared content, max. 1.0 %	
Na	25 % from declared content, max. 0.67 %	

Content of calcium can be declared only if it is water-soluble.

4. Calcium and magnesium mineral fertilizers

	Ca	$CaCO_3$	MgO	$MgCO_3$
a) limestone, dolomitic limestone, calcareous dolomite, dolomite		3.0		1.0
b) white air-hardening lime, dolomitic air-hardening lime	3.0		1.0	

5. Organic and organo-mineral fertilizers

a) for individual nutrient with declared content below 3%

nitrogen	0.2	N
diphosphorus pentaoxide	0.2	P_2O_5
potassium oxide	0.2	K_2O
negative deviations from the given total nutrient content at most:	0.5	

b) for individual nutrient with declared content at least 3%

nitrogen	1.0	N
diphosphorus pentaoxide	2.0	P_2O_5
potassium oxide	1.0	K_2O
negative deviations from the given total nutrient content at most:	2.0	

c) for secondary nutrients

CaO	25 % from declared content, max. 0.9 %
MgO	25 % from declared content, max. 0.9 %
S	25 % from declared content, max. 1.0 %
Na	25 % from declared content, max. 0.67 %

Content of calcium can be declared only if it is water-soluble.

Fertilizer type tables

1) Mineral straight fertilizers

a) Nitrogen fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.1.1	calcium saltpetre	15 % of N	total nitrogen *additional optional data*: nitrate nitrogen, ammonia nitrogen	nitrogen as total N or as nitrate and ammonia N; maximum content of ammonia nitrogen: 1.5% of N	calcium nitrate together with ammonium nitrate	nitrate and ammonia nitrogen content may be specified
1.1.2	calcium magnesium saltpetre	13 % of N 5 % of MgO	nitrate nitrogen water-soluble magnesium oxide	nitrate nitrogen; magnesium content is given in the form of water-soluble salt expressed as magnesium oxide	calcium nitrate magnesium nitrate	
1.1.3	solution of magnesium saltpetre	6 % of N 9 % of MgO	nitrate nitrogen water-soluble magnesium oxide	nitrate nitrogen; magnesium content is given in the form of water-soluble salt, expressed as magnesium oxide; minimum pH value 4	magnesium nitrate	
1.1.4	sodium nitrate	15 % of N	nitrate nitrogen	nitrate nitrogen	sodium nitrate obtained by chemical reaction	
1.1.5	Chile saltpetre	15 % of N	nitrate nitrogen	nitrate nitrogen	natural sodium nitrate	
1.2.1	nitrogenous lime (calcium cyanamide	18 % of N	total nitrogen	nitrogen as total N; at least 75 % of the nitrogen specified is bound as cyanamide	calcium cyanamide, calcium oxide together with ammonium salts, urea	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1.2.2	nitrogenous lime with nitrate	18 % of N	total nitrogen, nitrate nitrogen	nitrogen as total N; at least 75 % of nitrogen (after subtraction of nitrate nitrogen) is bound as cyanamide; nitrate nitrogen content from 1 % to 3 % of N	calcium cyanamide, calcium oxide, nitrate, together with ammonium salts, urea	
1.3	ammonium sulphate	20 % of N	ammonia nitrogen	nitrogen as ammonia N	ammonium sulphate	

Nitrogen fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.4.1	ammonium nitrate	28 % of N	total, ammonia and nitrate nitrogen	nitrogen as total N, or as ammonia and nitrate N, both forms participate in the content by one half	ammonium nitrate	the fertilizer may be supplied in sealed packages only
1.4.2	ammonium saltpetre	20 % of N	total, ammonia and nitrate nitrogen	nitrogen as total N, or as ammonia and nitrate N, both forms participate in the content by one half	ammonium nitrate with calcium and magnesium carbonate and sulphate	the fertilizer may be denominated as ammonium saltpetre with limestone (dolomite) only if it contains, in addition to ammonium nitrate, also calcium carbonate (limestone) or dolomite, at least 20 %; purity of carbonates used min. 90 %
1.5	ammonium sulphate with ammonium nitrate	25 % of N	total, ammonia and nitrate nitrogen	nitrogen as total N, or as ammonia and nitrate N; minimum nitrate nitrogen content 5 %	ammonium nitrate, ammonium sulphate	
1.6	ammonium nitrate with ammonium sulphate and magnesium sulphate	19 % of N 5 % of MgO	total, ammonia and nitrate nitrogen water-soluble magnesium oxide	nitrogen as total N, or as ammonia and nitrate N; minimum content of nitrate nitrogen 6 % magnesium in the form of water-soluble salt, as magnesium oxide	ammonium nitrate, ammonium sulphate, magnesium sulphate	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.7	ammonium nitrate with ammonium sulphate and magnesium sulphate	19 % of N 5 % of MgO	total, ammonia and nitrate nitrogen total magnesium oxide	nitrogen as total N, or as ammonia and nitrate N; minimum content of nitrate nitrogen 6 % magnesium in the form total magnesium oxide	ammonium nitrate, ammonium and magnesium compounds (magnesium calcium carbonate - dolomite, magnesium carbonate- magnesite, or magnesium and ammonium sulphate	water-soluble magnesium oxide content may be specified
1.8	urea	44 % of N	total nitrogen as urea nitrogen	nitrogen as total N; max. biuret content 1.2 %	urea	

Nitrogen fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.9.1	solution of calcium nitrate	8 % of N	total nitrogen	nitrogen as total N or as nitrate and ammonia N; ammonia nitrogen at most 1 %	solution of calcium nitrate in water	nitrate and ammonia nitrogen content may be specified
1.9.2	liquid nitrogen fertilizer	15 % of N	total and urea nitrogen; ammonia or nitrate nitrogen if their content is 1 % at least	nitrogen as total N or as urea, ammonia and nitrate N; maximum biuret content = urea nitrogen content by a factor of 0.026	obtained by chemical method, or by dissolution in water; stable under atmospheric pressure; without addition of nutrients of animal or plant origin	the fertilizer may be put into circulation with statement "low biuret content" if the biuret content does not exceed 0.2 %
1.9.3	solution of ammonium nitrate with urea	26 % of N	total, urea, ammonia, nitrate nitrogen	nitrogen as total N or as urea, ammonia and nitrate N; urea nitrogen makes a half of total nitrogen; maximum biuret content 0.5 %	urea, ammonium nitrate; produced by chemical method or obtained by dissolution in water	the fertilizer may be put into circulation with statement "low biuret content" if the biuret content does not exceed 0.2 %
1.10	liquid ammonia	80 % of N	ammonia nitrogen	nitrogen as ammonia N	ammonia	the fertilizer may be put into circulation only with the information "not suitable for surface application"
1.11	magnesium nitrate	10 % of N 14 % of MgO	nitrate nitrogen water-soluble magnesium oxide	nitrate nitrogen water-soluble magnesium oxide	obtained by chemical method, containing magnesium nitrate hexahydrate as the main component	If put into circulation in the form of crystals, a note "in crystalline form" may be added

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.12	ammonium sulphate with inhibitor of nitrification (dicyanodiamide)	20 % of N	total nitrogen ammonia, dicyanodiamide nitrogen	nitrogen as total N; minimum content of ammonia nitrogen: 18 %; minimum content of dicyanodiamide nitrogen: 1.5 %	obtained by chemical method, containing ammonium sulphate and dicyanodiamide	direction for application of fertilizer with inhibitor
1.13	ammonium nitrate with ammonium sulphate with inhibitor of nitrification (dicyanodiamide)	24 % of N	total nitrogen; nitrate, ammonia and dicyanodiamide nitrogen	nitrogen as total N; minimum content of nitrate nitrogen: 3%; minimum content of dicyanodiamide nitrogen: 1.5 %	obtained by chemical method, containing ammonium nitrate and ammonium sulphate and dicyanodiamide	direction for application of fertilizer with inhibitor
1.14	urea with ammonium sulphate	30 % of N 12 % of SO_3	total nitrogen ammonia, urea nitrogen water-soluble sulphur trioxide	nitrogen as ammonia and urea N; minimum content of ammonia nitrogen: 4%; maximum biuret content: 0.9 %; minimum content of sulphur expressed as sulphur trioxide: 12 %	obtained by chemical method from urea and ammonium sulphate	
1.15	urea-formaldehyde	36 % of N	total nitrogen; urea nitrogen if its content makes at least 1 wt. %; nitrogen from urea-formaldehyde soluble in cold water; nitrogen from urea- formaldehyde soluble in hot water only	nitrogen as total N; at least 1/5 of the declared total nitrogen content must be soluble in hot water; at least 31 % of nitrogen from urea-formaldehyde; maximum urea nitrogen content: 5 %	obtained by reaction of urea with formaldehyde, containing urea-formaldehyde molecules as the main component; polymer	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.16	nitrogen fertilizer containing crotonylidene diurea	18 % of N	total nitrogen; nitrate, ammonia and urea nitrogen if their content is 1 % at least; crotonylidene diurea nitrogen	nitrogen as total N; at least 3 % of nitrogen in the form of ammonia and/or nitrate and/or urea N; at least 1/3 of the total nitrogen content declared must come from crotonylidene diurea; maximum biuret content = (urea + crotonylidene diurea) nitrogen content by a factor of 0.026	obtained by chemical method, containing crotonylidene diurea and single-component nitrogen fertilizer from the list of nitrogen fertilizers, except products 1.2.1, 1.2.2, and 1.4.1 and 1.4.2	
1.17	nitrogen fertilizer containing isobutylidene diurea	18 % of N	total nitrogen nitrate, ammonia and urea nitrogen if their content is 1 % at least; isobutylidene diurea nitrogen	nitrogen as total N; at least 3 % of nitrogen in the form of ammonia and/or nitrate and/or urea N; at least 1/3 of the total nitrogen content declared must come from isobutylidene diurea; maximum biuret content = (urea + isobutylidene diurea) nitrogen content by a factor of 0.026	obtained by chemical method, containing isobutylidene diurea and single-component nitrogen fertilizer from the list of nitrogen fertilizers, except products 1.2.1, 1.2.2, and 1.4.1 and 1.4.2	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.18	nitrogen fertilizer containing urea-formaldehyde	18 % of N	total nitrogen; nitrate, ammonia and urea nitrogen if their content is 1 % at least; urea-formaldehyde nitrogen; nitrogen from urea-formaldehyde soluble in cold water; nitrogen from urea-formaldehyde soluble in hot water only	nitrogen as total N; at least 3 % of nitrogen in the form of ammonia and/or nitrate and/or urea N; at least 1/3 of the total nitrogen content declared must come from urea-formaldehyde; urea-formaldehyde nitrogen must contain at least 1/5 of nitrogen soluble in hot water; maximum biuret content = (urea + urea-formaldehyde) nitrogen content by a factor of 0.026	obtained by chemical method containing urea-formaldehyde and straight nitrogen fertilizer from the list of nitrogen fertilizers, except products 1.2.1, 1.2.2, and 1.4.1 and 1.4.2	
1.19	crotonylidene diurea	28 % of N	total nitrogen; urea nitrogen if its content is 1 wt. % at least; crotonylidene diurea nitrogen	total nitrogen; at least 25 % of nitrogen from crotonylidene diurea; maximum urea nitrogen content: 3 %	obtained by reaction of urea with crotonic aldehyde; monomer	
1.20	isobutylidene diurea	28 % of N	total nitrogen; urea nitrogen if its content is 1 wt. % at least; isobutylidene diurea nitrogen	total nitrogen; at least 25 % of nitrogen from isobutylidene diurea; maximum urea nitrogen content: 3 %	obtained by reaction of urea with isobutyl aldehyde; monomer	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
1.21	calcium nitrate - suspension	8 % of N 14 % of CaO	total nitrogen, nitrate nitrogen water-soluble calcium oxide	nitrogen as total N or as nitrate and ammonia N; maximum ammonia nitrogen content: 1.0%; calcium as water-soluble CaO	obtained by suspending calcium nitrate in water	Type denomination may be followed by one of the following appropriate statements: - for top dressing for production of nutrient solutions and suspensions - for soil fertilization
1.22	nitrogen fertilizer in solution with urea-formaldehyde	18 % of N	total nitrogen; nitrate, ammonia, urea and urea-formaldehyde nitrogen if their content is 1 % at least	nitrogen as total N; at least one third of the total nitrogen content must come from urea-formaldehyde; maximum biuret content = (urea + urea-formaldehyde) nitrogen content by a factor of 0.026	obtained by chemical method or by dissolution of urea-formaldehyde and nitrogen fertilizer from the list of nitrogen fertilizers, except products No. 1.2.1, 1.2.2, and 1.4.1 and 1.4.2	
1.23	nitrogen fertilizer in suspension with urea-formaldehyde	18 % of N	total nitrogen; nitrate, ammonia, urea and urea-formaldehyde nitrogen if their content is 1 % at least; nitrogen from urea-formaldehyde soluble in cold water; nitrogen from urea-formaldehyde soluble in hot water only	nitrogen as total N; at least one third of the total nitrogen content must come from urea-formaldehyde, three fifths of which must be soluble in hot water; maximum biuret content = (urea + urea-formaldehyde) nitrogen content by a factor of 0.026	obtained by chemical method or by suspending urea-formaldehyde and nitrogen fertilizer from the list of nitrogen fertilizers, except products No. 1.2.1, 1.2.2, and 1.4.1 and 1.4.2	

b) Phosphatic fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
2.1.1	Thomas slag	10 % of P_2O_5	phosphate soluble in 2% citric acid	phosphorus as P_2O_5 soluble in 2% citric acid; sieve test: 96 % of particles below 0.63 mm, 75 % of particles below 0.16 mm	calcium silicophosphate; ground slag containing phosphorus, obtained during production of steel	the level of phosphorus content may be specified within a range of 2 weight %
2.1.2	superphosphate	16 % of P_2O_5	phosphate soluble in neutral ammonium citrate and in water	phosphorus as P_2O_5 soluble in neutral ammonium citrate; at least 93 % of the specified content in water-soluble form	monocalcium phosphate, calcium sulphate; produced from ground natural phosphate by decomposition with sulphuric acid	test sample 1 g
2.1.3	enriched superphosphate	25 % of P_2O_5	phosphate soluble in neutral ammonium citrate and in water	phosphorus as P_2O_5 soluble in neutral ammonium citrate; at least 93 % of the specified content in water-soluble form	monocalcium phosphate, calcium sulphate; produced from ground natural phosphate by decomposition with sulphuric acid and phosphoric acid	test sample 1 g
2.1.4	triple superphosphate	38 % of P_2O_5	phosphate soluble in neutral ammonium citrate and in water	phosphorus as P_2O_5 soluble in neutral ammonium citrate; at least 93 % of the specified content in water-soluble form	monocalcium phosphate produced from ground natural phosphate by decomposition with phosphoric acid	test sample 3 g

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
2.2	partially decomposed phosphate, or enriched	20 % of P_2O_5	phosphate soluble in mineral acids and in water	phosphorus as P_2O_5 soluble in mineral acids; at least 40 % of the specified content soluble in water; sieve test: 98 % of particles below 0.63 mm, 90 % of particles below 0.16 mm	mono- and tricalcium phosphate, calcium sulphate; partial decomposition of ground raw phosphate with sulphuric acid or phosphoric acid	the scope and method of application must be specified in the directions

Phosphatic fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
2.3	dicalcium phosphate	38 % of P_2O_5	phosphate soluble in alkaline ammonium citrate (Petermann)	phosphorus as P_2O_5 soluble in alkaline ammonium citrate; sieve test: 98 % of particles below 0.63 mm, 90 % of particles below 0.16 mm	dicalcium phosphate dihydrate; prepared by decomposition of mineral phosphates	
2.4	calcinated phosphate	25 % of P_2O_5	phosphate soluble in alkaline ammonium citrate (Petermann)	phosphorus as P_2O_5 soluble in alkaline ammonium citrate; sieve test: 96 % of particles below 0.63 mm, 75 % of particles below 0.16 mm	alkaline calcium phosphate, calcium silicate; thermal decomposition of raw phosphate with admixture of compounds of alkalies and silicic acid	
2.5	aluminium calcium phosphate	30 % of P_2O_5	phosphate soluble in mineral acids and in alkaline ammonium citrate (Joulie)	phosphorus as P_2O_5 soluble in mineral acids; at least 75 % of the specified content soluble in alkaline ammonium citrate; sieve test: 98 % of particles below 0.63 mm, 90 % of particles below 0.16 mm	aluminium calcium phosphate; thermal decomposition of raw phosphate	
2.6	natural soft phosphorite	25 % of P_2O_5	phosphate soluble in mineral acids and in 2 % formic acid	phosphorus as P_2O_5 soluble in mineral acids; at least 55 % of the specified content soluble in 2 % formic acid; sieve test: 99 % of particles below 0.125 mm, 90 % of particles below 0.063 mm	tricalcium phosphate and calcium carbonate; grinding of soft phosphorite	the mesh fraction of 0.063 mm must be specified; the scope and method of application must be specified in the directions for use

c) Potassium fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
3.1	raw potassium salt (kainite)	10% of K_2O 5% of MgO	water-soluble potassium oxide water-soluble magnesium oxide	potassium as water-soluble K_2O; magnesium in the form of water-soluble salt expressed as magnesium oxide	raw potassium salt ($KCl + MgSO_4$)	
3.2	enriched raw potassium salt	18 % of K_2O	water-soluble potassium oxide	potassium as water-soluble K_2O	raw potassium salt, potassium chloride ($KCl + MgSO_4$)	content of water-soluble magnesium oxide may be specified if its content is at least 5 % of MgO
3.3	potassium chloride	37 % of K_2O	water-soluble potassium oxide	potassium as water-soluble K_2O	potassium chloride, obtained from raw salt	the scope and method of application must be specified in the directions for use
3.4	potassium chloride with magnesium	37 % of K_2O 5 % of MgO	water-soluble potassium oxide water-soluble magnesium oxide	potassium as water-soluble K_2O; magnesium in the form of water-soluble salt expressed as magnesium oxide	potassium chloride, magnesium salts, obtained from raw salt with addition of magnesium salts	the scope and method of application must be specified in the directions for use
3.5	potassium sulphate	47 % of K_2O	water-soluble potassium oxide	potassium as water-soluble K_2O; maximum content of chlorides: 3 % of Cl^-	potassium sulphate	chloride content may be specified
3.6	potassium sulphate with magnesium	22 % of K_2O 8 % of MgO	water-soluble potassium oxide water-soluble magnesium oxide	potassium as water-soluble K_2O; magnesium in the form of water-soluble salt expressed as magnesium oxide; maximum content of chlorides: 3 % of Cl	potassium sulphate, magnesium sulphate	chloride content may be specified

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
3.7	potassium sulphate with kieserite	8 % of MgO 6 % of K_2O totally 20 %	water-soluble magnesium oxide water-soluble potassium oxide	magnesium in the form water-soluble salt expressed as magnesium oxide; potassium as water-soluble K_2O; maximum content of chlorides: 3 % of Cl^-	magnesium sulphate monohydrate, potassium sulphate; prepared from kieserite by addition of potassium sulphate	chloride content may be specified

d) Fertilizers with calcium, magnesium and sulphur (fertilizers with auxiliary nutrients)

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
4.1	calcium sulphate	14 % of S 25 % of CaO	sulphur calcium oxide	sulphur expressed as S; calcium expressed as CaO; sieve test: 99 % below 10 mm, 80 % below 2 mm	calcium sulphate in various hydration degrees from natural or industrial resources	calcium content may be specified
4.2	calcium chloride - solution	12 % of CaO	water-soluble calcium oxide	calcium expressed as water-soluble CaO	calcium chloride	fertilizer labelling must comprise warning of its herbicide properties
4.3	sulphur	98 % of S	sulphur	sulphur expressed as S	sulphur from natural or industrial resources	
4.4	kieserite magnesium sulphate	24 % of MgO 54 % of SO_4^{2-}	water-soluble magnesium oxide water soluble sulphur trioxide	magnesium expressed as water-soluble MgO; sulphur expressed as water-soluble sulphate anion SO_4^{2-}	magnesium sulphate monohydrate	sulphur content may be specified
4.5	bitter salt magnesium sulphate	15 % of MgO 33 % of SO_4^{2-}	water-soluble magnesium oxide water soluble sulphur trioxide	magnesium expressed as water-soluble MgO; sulphur expressed as water-soluble sulphate anion SO_4^{2-}	bitter salt, magnesium sulphate heptahydrate	sulphur content may be specified
4.6	magnesium chloride - solution	8 % of Mg	water-soluble magnesium	magnesium expressed as water-soluble Mg; maximum calcium content: 2% of Ca	magnesium chloride together with calcium chloride	

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
4.7	magnesium sulphate - solution	5 % of MgO 12 % of SO_4^{2-}	water-soluble magnesium oxide water soluble sulphur trioxide	magnesium expressed as MgO water-soluble magnesium sulphate; sulphur expressed as water-soluble sulphate anion SO_4^{2-}	magnesium sulphate	sulphur content may be specified
4.8	magnesium hydroxide	60 % of MgO	total magnesium oxide	total magnesium oxide as MgO; sieve test: 99 % of particles below 0.063 mm	obtained by chemical method the main chemical component is magnesium hydroxide	
4.9	magnesium hydroxide - suspension	24 % of MgO	total magnesium oxide	total magnesium oxide as MgO	obtained by suspending type 4.8	

2) Mineral compound fertilizers

a) NPK fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
5.1	NPK fertilizer	3 % of N 5 % of P_2O_5 5 % of K_2O nutrients totally 20 %	nitrogen in forms 1 to 5 phosphate in solubility forms 1 to 8 water-soluble potassium oxide	for nitrogen forms 2 to 5 the content is specified only in case that it is 1 % at least; information on the content and other requirements according to Table 3; fineness of phosphate grinding according to Table 5	product obtained by chemical reaction or by mixing, without addition of nutrients of animal or plant origin	the weighed portion for determination of phosphorus solubility forms (2) and (3) is 1 g
5.2	NPK fertilizer	3 % of N 5 % of P_2O_5 5 % of K_2O nutrients totally 20 %	nitrogen in forms 6 to 9 and also nitrogen in forms 1 to 5 phosphate in solubility forms 1 to 3, 8 and 9 water-soluble potassium oxide	for nitrogen forms 2 to 9 the content is specified only in case that it is 1 % at least; information on the content and other requirements according to Table 4	product obtained by chemical reaction or by mixing	the weighed portion for determination of phosphorus solubility forms (2) and (3) is 1 g

NPK fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
5.3	coated NPK fertilizer	3 % of N 5 % of P_2O_5 5 % of K_2O nutrients totally 20 %	nitrogen in forms 1 to 5 phosphate in solubility forms 1 to 3 water-soluble potassium oxide	for nitrogen forms 2 to 5 the content is specified only in case that it is 1 % at least; information on the content and other requirements according to Table 4	product obtained by chemical reaction or by mixing, granulated, granules coated with material harmless to health, at least 70 % of granules must be coated in this way	the weighed portion for determination of phosphorus solubility forms (2) and (3) is 1 g
5.4	NPK fertilizer - in solution	2 % of N 3 % of P_2O_5 3 % of K_2O nutrients totally 15 %	nitrogen in forms 1 to 4 phosphate in solubility form 1 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content is specified only in case that it is 1 % at least; the highest biuret content: urea content by a factor of 0.026	product obtained by chemical reaction and by dissolution in water; stable under atmospheric pressure; without addition of nutrients of animal or plant origin	the fertilizer may be labelled with statement: "low biuret content" if the biuret content does not exceed 0.2 %

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
5.5	NPK fertilizer - in suspension	3 % of N 4 % of P_2O_5 4 % of K_2O nutrients totally 20 %	nitrogen in forms 1 to 4 phosphate in solubility forms 1 to 3 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content is specified only in case that it is 1 % at least; the highest biuret content: urea content by a factor of 0.026; information on the content and other requirements according to Table 3	product obtained by chemical reaction and by suspending in water, without addition of nutrients of animal or plant origin	the fertilizer may be labelled with statement: "low biuret content" if the biuret content does not exceed 0.2 %
5.6	NPK fertilizer containing crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	5 % of N 5 % of P_2O_5 5 % of K_2O nutrients totally 20 %	nitrogen in forms 1 to 8 with the exception of form 5 phosphorus in solubility forms 1 to 3 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content is specified only in case that it is 1 % at least; at least 25 % of the total nitrogen content must be bound in forms 6, 7, or 8; at least 60 % of nitrogen in form 7 must be soluble in hot water; information on the content and other requirements according to Table 3	product obtained by chemical reaction without addition of nutrients of animal or plant origin, containing crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	the weighed portion for determination of phosphorus solubility forms (2) and (3) is 1 g

b) NP fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
6.1	NP fertilizer	3 % of N 5 % of P_2O_5 nutrients totally 18 %	nitrogen in forms 1 to 5 phosphate in solubility forms 1 to 8	for nitrogen forms 2 to 5 the content is specified only if it is higher than 1 %; information on the content and other requirements according to Table 3 and 4	product obtained by chemical reaction or by mixing; without addition of nutrients of animal or plant origin	
6.2	NP fertilizer - in solution	3 % of N 5 % of P_2O_5 nutrients totally 18 %	nitrogen in forms 1 to 4 phosphate in solubility form 1	for nitrogen forms 2 to 4 the content is specified only if it is higher than 1 %; the highest biuret content: urea nitrogen content by a factor of 0.026	product obtained by chemical reaction and by dissolution in water; stable under atmospheric pressure; manufactured without addition of nutrients of animal or plant origin	the fertilizer may be labelled with statement: "low biuret content" if the biuret content does not exceed 0.2 %
6.3	NP fertilizer - in suspension	3 % of N 5 % of P_2O_5 nutrients totally 18 %	nitrogen in forms 1 to 4 phosphate in solubility forms 1 to 3	for nitrogen forms 2 to 4 the content is specified only if it is higher than 1 %; the highest biuret content: urea nitrogen content by a factor of 0.026 information on the content and other requirements according to Table 3	product obtained by chemical method and by suspending in water; without addition of nutrients of animal or plant origin	the fertilizer may be labelled with statement: "low biuret content" if the biuret content does not exceed 0.2 %

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
6.4	NP fertilizer with crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	5 % of N 5 % of P_2O_5 nutrients totally 18 %	nitrogen in forms 1 to 8 with the exception of form 5	for nitrogen forms 2 to 4 the content is specified only in case that it is 1 % at least; at least 25 % of the total nitrogen content must be bound in forms 6, 7, or 8; at least 60 % of nitrogen in form 7 must be soluble in hot water; information on the content and other requirements according to Table 3	product obtained by chemical reaction without addition of nutrients of animal or plant origin, containing crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	the weighed portion for determination of solubility forms (2) and (3) is 1 g

c) NK fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
7.1	NK fertilizer	3 % of N 5 % of K_2O nutrients totally 18 %	nitrogen in forms 1 to 5 water-soluble potassium oxide	for nitrogen forms 2 to 5 the content may be specified only if it is higher than 1 %	product obtained by chemical reaction or by mixing; without addition of nutrients of animal or plant origin	
7.2	NK fertilizer in solution	3 % of N 5 % of K_2O nutrients totally 15 %	nitrogen in forms 1 to 4 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content may be specified only if it is higher than 1 %; the highest biuret content: urea nitrogen content by a factor of 0.026	product obtained by chemical reaction and by dissolving in water; stable under atmospheric pressure; without addition of nutrients of animal or plant origin	
7.3	NK fertilizer - in suspension	3 % of N 5 % of K_2O nutrients totally 15 %	nitrogen in forms 1 to 4 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content may be specified only if it is higher than 1 %; the highest biuret content: urea nitrogen content by a factor of 0.026	product obtained by chemical reaction and by suspending in water; without addition of nutrients of animal or plant origin	the fertilizer may be labelled with statement: "low biuret content" if the biuret content does not exceed 0.2 %

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
7.4	NK fertilizer with crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	5 % of N 5 % of K_2O nutrients totally 18 %	nitrogen in forms 1 to 8 with the exception of form 5 water-soluble potassium oxide	for nitrogen forms 2 to 4 the content is specified only in case that it is 1 % at least; at least 25 % of the total nitrogen content must be bound in forms 6, 7, or 8; at least 60 % of nitrogen in form 7 must be soluble in hot water	product obtained by chemical reaction; without addition of nutrients of animal or plant origin; containing crotonylidene diurea or isobutylidene diurea or urea-formaldehyde	

d) PK fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
8.1	PK fertilizer	5 % of P_2O_5 5 % of K_2O nutrients totally 18 %	phosphate in solubility forms 1 to 9 water-soluble potassium oxide	information on the content and other requirements according to Table 3 and 4	product obtained by chemical reaction or by mixing; without addition of nutrients of animal or plant origin	
8.2	PK fertilizer in solution	5 % of P_2O_5 5 % of K_2O nutrients totally 18 %	phosphate in solubility form 1 water-soluble potassium oxide		product obtained by chemical reaction and by dissolution in water; without addition of nutrients of animal or plant origin	
8.3	PK fertilizer - in suspension	5 % of P_2O_5 5 % of K_2O nutrients totally 18 %	phosphate in solubility forms 1 to 3 water-soluble potassium oxide	information on the content and other requirements according to Table 3	product obtained by chemical reaction and by suspending in water; without addition of nutrients of animal or plant origin	

3) Fertilizers containing trace nutrients only as the type-determining constituent

a) Fertilizer mixtures based on trace nutrients

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
9.1	Mixtures of trace nutrients in solid form	5 % of total nutrients	the total content of each trace nutrient; the water-soluble content of each trace nutrient, if that soluble fraction is at least half the total content; if the trace nutrient is completely soluble in water, only the content of the water-soluble portion shall be declared	total and/or water soluble content of each trace nutrient	product obtained by mixing two or more fertilizers of type 3 b)	the chelate forming agent and the portion of the water-soluble content bound in the form of chelate must be specified
9.2	Mixtures of trace nutrients in liquid form	2 % of total nutrients	the total content of each trace nutrient; the water-soluble content of each trace nutrient, if that soluble fraction is at least half the total content; if the trace nutrient is completely soluble in water, only the content of the water-soluble portion shall be declared	total and/or water soluble content of each trace nutrient	product obtained by dissolving and/or suspending two or more fertilizers of type 3 b)	the chelate forming agent and the portion of the water-soluble content bound in the form of chelate must be specified

b) Fertilizers containing only one trace nutrient

Boron

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
10.1	boric acid	14 % of B	water-soluble boron	boron expressed as water- soluble B	produced from borate treated with acids	
10.2	sodium borate	10 % of B	water-soluble boron	boron expressed as water- soluble B	sodium borate	
10.3	calcium borate	7 % of B	boron	boron expressed as total B; fineness of grinding: 98 % below 0.063 mm	calcium borate from colemanite or pandermite	
10.4	boron ethanolamine	8 % of B	water-soluble boron	boron expressed as water- soluble B	produced by reaction of boric acid with ethanolamine	
10.5	boron - fertilizer in solution	2 % of B	water-soluble boron	boron expressed as water- soluble B	solution of boron ethanolamine, sodium borate or boric acid in water	
10.6	boron - fertilizer in suspension	2 % of B	water-soluble boron	boron expressed as water- soluble B	by suspending boron ethanolamine, sodium borate or boric acid in water	

Cobalt

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
11.1	cobalt salt	19 % of Co	water-soluble cobalt	cobalt expressed as water-soluble Co	salt of cobalt	anion of the salt must be specified
11.2	cobalt chelate	2 % of Co	water-soluble cobalt	cobalt expressed as water-soluble Co; at least 80 % of the specified cobalt content must be in the form of chelate	chelate of cobalt	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified
11.3	cobalt - fertilizer in solution	2 % of Co	water-soluble cobalt	cobalt expressed as water-soluble Co	solution of salt or chelate of cobalt in water	anion of the salt must be specified; the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified

Copper

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
12.1	salt of copper	20 % of Cu	water-soluble copper	copper expressed as water-soluble Cu	copper(II) salt	anion of the salt used must be specified
12.2	copper(II) oxide	70 % of Cu	copper	copper expressed as total Cu; fineness of grinding: 98 % of particles below 0.063 mm	copper(II) oxide	
12.3	copper(II) hydroxide	45 % of Cu	copper	copper expressed as total Cu; fineness of grinding: 98 % of particles below 0.063 mm	copper(II) hydroxide	
12.4	chelate of copper	9 % of Cu	water-soluble copper	copper expressed as water-soluble Cu; at least 80 % of the copper content specified is in the form of chelate	copper chelate	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified
12.5	fertilizer on the basis of copper	5 % of Cu	copper	copper expressed as total Cu; fineness of grinding: 98 % of particles below 0.063 mm	mixture of salts of copper, copper(II) oxide, hydroxide or chelate and also admixture of harmless vehicle	the chelate forming agent and the portion of the total content bound in the form of chelate must be specified; the water- soluble copper content may be specified if it makes at least 'li of the total content
12.6	copper - fertilizer in solution	3 % of Cu	water-soluble copper	copper expressed as water-soluble Cu	dissolution of copper salt or chelate in water	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
12.7	cupric oxychloride	50 % of Cu	copper	copper expressed as total Cu; fineness of grinding: 98 % of particles below 0.063 mm	cupric oxychloride	fertilizer labelling must comprise warning of its herbicide properties
12.8	cupric oxychloride - suspension	17 % of Cu	copper	copper expressed as total Cu	suspension of cupric oxychloride in water	

Iron

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
13.1	salt of iron	12 % of Fe	water-soluble iron	iron expressed as water- soluble Fe	salt of bivalent iron	anion of the salt used must be specified; fertilizer labelling must comprise warning of its herbicide properties
13.2	chelate of iron	5 % of Fe	water-soluble iron	iron expressed as water- soluble Fe; at least 80 % of the specified iron content must be in the form of chelate	chelate of iron	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified
13.3	iron - fertilizer in solution	2 % of Fe	water-soluble iron	iron expressed as water- soluble Fe	solution of salt or chelate of iron in water	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified

Manganese

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
14.1	salt of manganese	17 % of Mn	water-soluble manganese	manganese expressed as water soluble Mn	salt of manganese (with bivalent manganese)	the anion of the salt used must be specified
14.2	chelate of manganese	5 % of Mn	water-soluble manganese	manganese expressed as water soluble Mn; at least 80 % of the manganese content specified must be in the form of chelate	chelate of manganese	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified
14.3	oxide of manganese	40 % of Mn	manganese	manganese expressed as total Mn; fineness of grinding: 80 % of particles below 0.063 mm	oxide of manganese	
14.4	fertilizer on the basis of manganese	17 % of Mn	manganese	manganese expressed as total Mn	mixture of salt and oxide of manganese	water-soluble manganese content may be specified if it makes at least 'li of the total content
14.5	manganese - fertilizer in solution	3 % of Mn	water-soluble manganese	manganese expressed as water soluble Mn	solution of manganese or of chelate of manganese in water	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified

Molybdenum

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
15.1	sodium molybdate	35 % of Mo	water-soluble molybdenum	molybdenum expressed as water-soluble Mo	sodium molybdate	
15.2	ammonium molybdate	50 % of Mo	water-soluble molybdenum	molybdenum expressed as water-soluble Mo	ammonium molybdate	
15.3	fertilizer on the basis of molybdenum	35 % of Mo	water-soluble molybdenum	molybdenum expressed as water-soluble Mo	mixture of sodium molybdate and ammonium molybdate	
15.4	molybdenum - fertilizer in solution	3 % of Mo	water-soluble molybdenum	molybdenum expressed as water-soluble Mo	solution of sodium molybdate or ammonium molybdate in water	

Zinc

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
16.1	salt of zinc	15 % of Zn	water-soluble zinc	zinc expressed as water- soluble Zn	salt of zinc	the anion of the salt used must be specified
16.2	chelate of zinc	5 % of Zn	water-soluble zinc	zinc expressed as water- soluble Zn	chelate of zinc	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified
16.3	zinc oxide	70 % of Zn	zinc	zinc expressed as total Zn; fineness of grinding: 80 % of particles below 0.063	zinc oxide	
16.4	fertilizer on the basis of zinc	30 % of Zn	zinc	zinc expressed as total Zn	mixture of zinc salt and zinc oxide	water-soluble zinc content may be specified if it makes at least 'li of the total content
16.5	zinc - fertilizer in solution	3 % of Zn	water-soluble zinc	zinc expressed as water- soluble Zn	solution of salt or chelate of zinc in water	the chelate forming agent and the portion of the water soluble content bound in the form of chelate must be specified

4) Calcium and magnesium-calcium fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
17.1.1	limestone	65 % of $CaCO_3$ + $MgCO_3$; from this $MgCO_3$ max. 4.6 relative %	calcium carbonate and magnesium carbonate	calcium expressed as $CaCO_3$; magnesium expressed as $MgCO_3$; size of particles: type A: particles from 0.09 to 0.5 mm min. 90 %; type B: particles below 0.5 mm min. 90 %	calcium carbonate and magnesium carbonate; from carbonate rock (natural limestone) by grinding	Type B may not be used for pneumatic spreading using road tankers
17.1.2	dolomite limestone	65 % of $CaCO_3$ + $MgCO_3$; from this $MgCO_3$ 4.6 to 22.9 relative %	calcium carbonate and magnesium carbonate	calcium expressed as $CaCO_3$; magnesium expressed as $MgCO_3$; size of particles: type A: particles from 0.09 to 0.5 mm min. 90 %; type B: particles below 0.5 mm min. 90 %	calcium carbonate and magnesium carbonate; from carbonate rock (natural limestone) by grinding	Type B may not be used for pneumatic spreading using road tankers
17.1.3	calcareous dolomite	65 % of $CaCO_3$ + $MgCO_3$; from this $MgCO_3$ 22.9 to 41.2 relative %	calcium carbonate and magnesium carbonate	calcium expressed as $CaCO_3$; magnesium expressed as $MgCO_3$; size of particles: type A: particles from 0.09 to 0.5 mm min. 90 %; type B: particles below 0.5 mm min. 90 %	calcium carbonate and magnesium carbonate; from carbonate rock (natural calcareous dolomite) by grinding	Type B may not be used for pneumatic spreading using road tankers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
17.1.4	dolomite	65 % of $CaCO_3$ + $MgCO_3$; from this $MgCO_3$ min. 41.2 relative %	calcium carbonate and magnesium carbonate	calcium expressed as $CaCO_3$; magnesium expressed as $MgCO_3$; size of particles: type A: particles from 0.09 to 0.5 mm min. 90 %; type B: particles below 0.5 mm min. 90 %	calcium carbonate and magnesium carbonate; from carbonate rock (natural dolomite) by grinding	Type B may not be used for pneumatic spreading using road tankers
17.1.5	dolomite	95 % of $CaCO_3$ + $MgCO_3$; from this $MgCO_3$ min. 35.0 relative %	calcium carbonate and magnesium carbonate	calcium expressed as $CaCO_3$; magnesium expressed as $MgCO_3$; size of particles: particles above 3.15 mm: max. 1.0 %; particles above 1.0 mm: max. 30 %	calcium carbonate and magnesium carbonate; by mining (without drying) of carbonate rock (natural dolomite)	
17.2.1	air-hardening lime, white	55 % of CaO + MgO; from this MgO max. 7.0 %	calcium oxide and magnesium oxide	calcium expressed as CaO; magnesium expressed as MgO; size of particles: type A: particles from 0.5 to 1.0 mm min. 90 %; type B: particles below 1.0 mm min. 90 %	calcium and magnesium oxide, from natural carbonate rock by burning and grinding	Type B may not be used for pneumatic spreading using road tankers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
17.2.2	air-hardening lime, dolomitic	55 % of CaO + MgO; from this MgO max. 7.0 %	calcium oxide and magnesium oxide	calcium expressed as CaO; magnesium expressed as MgO; size of particles: type A: particles from 0.5 to 1.0 mm min. 90 %; type B: particles below 1.0 mm min. 90 %	calcium oxide and magnesium oxide, from natural carbonate rock by burning and grinding	Type B may not be used for pneumatic spreading using road tankers

Fertilizers corresponding to types 17.1.1 to 17.2.2 are considered to be of the type as well as in granular form when the granules, after mixing in water, break down into particles of a size distribution corresponding to the type

5) Organic and organo-mineral fertilizers

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
18.1	organic fertilizer	a) repealed				
		b) 50 % of combustibles 1 % of N 1 % of P_2O_5 1 % of K_2O	combustibles total nitrogen total phosphorus total potassium combustibles	combustibles in dry matter expressed as loss by ignition; nitrogen expressed as total nitrogen in dry matter; phosphorus expressed as total P_2O_5 in dry matter; potassium expressed as total K_2O in dry matter; combustibles in dry matter expressed as loss by ignition;	exclusively from farm fertilizers by thermophilic aerobic fermentation	maximum application rate 10 tons of dry matter/ha in 3 years
		c) 35 % of combustibles 1 % of N 1 % of P_2O_5 1 % of K_2O	total nitrogen total phosphorus total potassium	nitrogen expressed as total nitrogen in dry matter; phosphorus expressed as total P_2O_5 in dry matter; potassium expressed as total K_2O in dry matter	exclusively from farm fertilizers, processed using earthworms	
		d) 65 % of combustibles 3 % of N 8 % of K_2O	total nitrogen total potassium	combustibles in dry matter expressed as loss by ignition; nitrogen expressed as total nitrogen in dry matter; potassium expressed as total K_2O in dry matter	from molasses after distillation of spirit, also "molasses stillage, condensed"	
		e) digestate 3-13 % 0,3 % of N	dry matter total nitrogen	nitrogen expressed as total nitrogen in a sample	exclusively from feed and farm fertilizers	fertilizer produced by anaerobic fermentation in biogas production

Type No.	*Type denomination*	*Minimum nutrient content*	*Components determining the type, forms and solubility of nutrients*	*Evaluated components and other requirements*	*Composition, method of production*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*	*7*
18.1	organic fertilizer	f) digestate - fugate < 3 % 0,1 % of N	dry matter total nitrogen	nitrogen expressed as total nitrogen in a sample	exclusively from feed and farm fertilizers	fertilizer produced by anaerobic fermentation in biogas production; the liquid fraction after separation, by its nature may exhibit the action of mineral fertilizer
		g) separated digestate >13 % 0,5 % of N	dry matter total nitrogen	nitrogen expressed as total nitrogen in a sample	exclusively from feed and farm fertilizers	fertilizer produced by anaerobic fermentation in biogas production; the solid fraction after separation
18.2	organo-mineral fertilizer	70 % of combustibles 3 % of N 3 % of P_2O_5 7 % of K_2O	combustibles total nitrogen total phosphorus total potassium	combustibles in dry matter expressed as loss by ignition; nitrogen expressed as total nitrogen in dry matter; phosphorus expressed as total P_2O_5 in dry matter potassium expressed as total K_2O in dry matter	exclusively from molasses after distillation of spirit and addition of mineral fertilizers, also "molasses stillage, condensed, enriched"	

6) Substrates and soils

Type No	*Type designation*	*Defining parameters*	*Values required*	*Composition*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*
19.1	Substrates for sowing, breeding and for plants with low nutrient demands	electrical conductivity [1)] pH [2)] combustibles in a dry sample	max. 0.35 mS/cm 5.0 – 7.5 min. 45.0%	List of approved ingredients: Peat Modified wood matter Rice husk Cocoa husk Coconut products (e.g. coconut, coir, chips) Clays and clay minerals Expanded clays Perlite Vermiculite Lava Pumice Rock wool Sand Stone rubble and meal Soils Bark Composted bark Compost obtained during composting of solely plant matter and/or farm fertilizers Cork Straw Raw materials of plant origin (flax, jute, cotton, plant fibres) Limestone Guano Separated digestate corresponding to a type 18.1.g)	For enrichment of substrates and nutrient addition it is allowed to use all fertilizers and supplementary substances that can be legally placed on the market in the Czech Republic [4)].
19.2	Substrates for plants with medium and higher nutrient demands	electrical conductivity [1)] pH [2)] combustibles in a dry sample	0.2 – 0.65 mS/cm 5.0 – 7.5 min. 45.0%		
19.3	Substrates for plants demanding acidic soil	electrical conductivity [1)] pH [2)] combustibles in a dry sample	max. 0.5 mS/cm 3.0 – 5.5 min. 45.0%		
19.4	Special substrates and soils a) Substrates for orchids	electrical conductivity [1)]	max. 0.4 mS/cm		

Type No	*Type designation*	*Defining parameters*	*Values required*	*Composition*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*
		pH [2)]	5.0 – 7.5		
		combustibles in a dry sample	min. 50.0%		
	b) Substrates for cactuses, succulents and xerophilic plants	electrical conductivity [1)]	max. 0.5 mS/cm		
		pH [2)]	5.0 – 8.5		
		combustibles in a dry sample	max. 30.0%		
	c) Substrates with higher content of mineral components	electrical conductivity [1)]	max. 0.6 mS/cm		
		pH [2)]	5.0 – 7.5		
		combustibles in a dry sample	10.0 – 50.0%		
	d) Soils and substrates based on mineral components5)	electrical conductivity [1)]	max. 0.5 mS/cm		
		pH [2)]	5.5 – 9.0		
		pH [3)]	5.0 – 8.5		
		combustibles in a dry sample	max. 13.0%		
		particles above 31.5 mm	max. 10.0%		

Type No	*Type designation*	*Defining parameters*	*Values required*	*Composition*	*Special provisions*
1	*2*	*3*	*4*	*5*	*6*
	e) Substrates with addition of fertilizers with long effect [6)]	including types 19.1-19.4d; the pH and combustible values shall always correspond to the relevant type			

[1)] pursuant to ČSN EN 13038
[2)] pursuant to ČSN EN 13037 (aqueous extract)
[3)] pursuant to ČSN EN 10390 (extracted by CaCl2 solution)
[4)] pursuant to Act No. 156/1998 Coll., on fertilizers
[5)] e.g. roof substrates, hydroponic substrates, substrates for sports fields
[6)] it is necessary to declare type, dose in kg/m^3 of substrate and the term for application of fertilizer

For fertilizers of types 1.1.1-1.23 and 5.1-7.4, Table 1 is used:

Table 1 - Forms of nitrogen

Order No.	Form
1	total nitrogen
2	nitrate nitrogen
3	ammonia nitrogen
4	urea nitrogen
5	cyanamide nitrogen
6	isobutylidene diurea nitrogen
7	urea-formaldehyde nitrogen
8	crotonylidene diurea nitrogen
9	dicyanodiamide nitrogen

For fertilizers of types 2.1.1-2.6, 5.1-6.4 and 8.1-8.3, Tables 2 and 3 are used:

Table 2 - Phosphate solubility forms (as P2O5)

Order No.	Form
1	soluble in water as P_2O_5
2	soluble in neutral ammonium citrate as P_2O_5
3	soluble in water and neutral ammonium citrate as P_2O_5
4	soluble in mineral acid only as P_2O_5
5	soluble in alkaline ammonium citrate (Petermann) as P_2O_5
6	soluble in 2 % citric acid as P_2O_5
7	soluble in mineral acid, with at least 75 % of this quantity being soluble in alkaline ammonium citrate (Joulie) as P_2O_5
8	soluble in mineral acid, with at least 55 % of this quantity being soluble in 2%
9	formic acid as P_2O_5
10	soluble in mineral acid, with at least 55 % of this quantity being soluble in 2% formic acid and at least 20 % being soluble in water as P_2O_5
	soluble in 2 % citric acid and in alkaline ammonium citrate (Petermann) as P_2O_5

Table 3 - Fineness of grinding (expressed as the screen undersize portion):

Name	Screen undersize portion in w %	Mesh size in mm
aluminium calcium phosphate	90	0.16
thermophosphate (calcinated	75	0.16
phosphate)	90	0.16
partially decomposed phosphate	75	0.16
Thomas slag	90	0.063
natural soft phosphorite		

For fertilizers of types 5.1-6.4 and 8.1-8.3, Table 4 is used:

Table 4 - Information on the content and other requirements regarding the phosphatic component of mineral compound fertilizers:

1	*2*	*3*	*4*	*5*
Compound fertilizers with:	***Statement that must be added to the type denomination:***	***Information on the solubility according to table 2 (order No.)***	***Minimum value of solubility in weight %***	***The fertilizer may not contain:***
a) less than 2 % of water-soluble phosphate as P_2O_5		2		Thomas slag, thermophosphate (calcinated phosphate), aluminium calcium phosphate, partially decomposed phosphate
b) at least 2 % water-soluble phosphate as P_2O_5		1, 3		natural soft phosphorite
natural soft phosphorite with water-soluble portion	" natural soft phosphorite with water-soluble portion"	9	1, 2	other kinds of phosphates
Thomas slag beside thermophosphate (calcinated phosphate), monocalcium phosphate or dicalcium phosphate	"with utilizable phosphate"	10		other kinds of phosphates than stated in Column 1
dicalcium phosphate	"with dicalcium phosphate"	5		other kinds of phosphates

For type 1 to 8.3 fertilizers, Table 5 is used:

Table 5 -Fineness of grinding (expressed as the screen undersize portion):

for arable land and pastures	for horticulture or leaf spreading
0,01 % B	0,01 % B
0,002 % Co	0,002 % Co[1)]
0,01 % Cu	0,002 % Cu
0,5 % Fe	0,02 % Fe
0,1 % Mn	0,01 % Mn
0,001 % Mo	0,001 % Mo
	0,002 % Zn

[1)] not for horticulture

Denomination of nutrients

1.

By verbal denomination	Using chemical symbol:	By verbal denomination:	Using chemical symbol:
nitrogen	N	sulphate anion	SO_4^{2-}
phosphorus	P	boron	B
phosphorus oxide	P_2O_5	iron	Fe
potassium	K	cobalt	Co
potassium oxide	K2O	copper	Cu
calcium	Ca	manganese	Mn
calcium oxide	CaO	molybdenum	Mo
calcium carbonate	$CaCO_3$	zinc	Zn
magnesium	Mg	sodium	Na
magnesium oxide	MgO	sulphur	S
magnesium carbonate	$MgCO_3$		

2.

For phosphorus, potassium, calcium, magnesium and sulphur the content of the element may be specified in the name together with the oxide or carbonate form. The following conversion factors apply to content of elements:

P_2O_5	0.436	P	(phosphorus)
K2O	0.830	K	(potassium)
CaO	0.715	Ca	(calcium)
$CaCO_3$	0.400	Ca	(calcium)
$CaCO_3$	0.560	CaO	(calcium oxide)
MgO	0.603	Mg	(magnesium)
$MgCO_3$	0.288	Mg	(magnesium)
$MgCO_3$	0.478	MgO	(magnesium oxide)
SO_4^{2-}	0.333	S	(sulphur)