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COUNCIL DIRECTIVE

of 18 September 1989

supplementing and amending Directive 76/116/EEC in respect of the trace elements boron, cobalt, copper, iron, manganese, molybdenum and zinc contained in fertilizers

(89/530/EEC)

(OJ L 281, 30.9.1989, p. 116)

Amended by:

	Official Journal		
	No	page	date
► <u>M1</u> Directive 97/63/EC of the European Parliament and of the Council of 24 November 1997	L 335	15	6.12.1997

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(89/530/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

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

Having regard to the proposal from the Commission⁽¹⁾,

In cooperation with the European Parliament⁽²⁾,

Having regard to the opinion of the Economic and Social Committee⁽³⁾,

Whereas it is necessary to adopt measures with the aim of progressively establishing the internal market over a period expiring on 31 December 1992; whereas the internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured;

Whereas Council Directive 76/116/EEC of 18 December 1975 on the approximation of the laws of the Member States relating to fertilizers⁽⁴⁾, as last amended by Directive 89/284/EEC⁽⁵⁾, lays down rules on the marketing of EEC-type fertilizers; whereas it has proved necessary to extend this Directive to cover the seven trace elements (boron, cobalt, copper, iron, manganese, molybdenum and zinc) contained in these fertilizers;

Whereas Directive 76/116/EEC should henceforth apply to soluble fertilizers or fluids containing one or more trace elements marketed individually and mixtures thereof and to certain chelated trace elements;

Whereas the Directives on fertilizers should be continually developed and updated as regards the adaptation to scientific and technical progress of the products listed in the Annexes to those Directives; whereas for this purpose it is considered necessary to extend the functions of the Committee provided for in Directive 76/116/EEC,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. Solid or fluid fertilizers listed in Chapter A of the Annex, containing only one of the following trace elements: boron, cobalt, copper, iron, manganese, molybdenum or zinc and meeting the requirements of the said Chapter A, may be marked ►**MI** 'EC FERTILIZER' ◀.
2. Mixtures of two or more of the fertilizers referred to in paragraph 1 containing at least two different trace elements may be marked ►**MI** 'EC FERTILIZER' ◀ if they meet the requirements of Chapter B of the Annex.

Article 2

►**MI** EC fertilizers ◀ complying with the provisions of Article 1 shall be packaged.

⁽¹⁾ OJ No C 304, 29. 11. 1988, p. 8.

⁽²⁾ OJ No C 47, 20. 2. 1989, p. 75 and Decision of 15 September 1989 (not yet published in the Official Journal).

⁽³⁾ OJ No C 102, 24. 4. 1989, p. 9.

⁽⁴⁾ OJ No C 304, 29. 11. 1988, p. 8.

⁽⁵⁾ OJ No C 47, 20. 2. 1989, p. 75 and Decision of 15 September 1989 (not yet published in the Official Journal).

▼B*Article 3*

1. The content of one or more of the following trace elements: boron, cobalt, copper, iron, manganese, molybdenum or zinc in the ►M1 EC fertilizers ◀ listed in Annex I to Directive 76/116/EEC shall be declared where the following two conditions are fulfilled:

- (a) the trace elements are added and present at least in the minimum quantities specified in Chapters C and D of the Annex to this Directive;
- (b) the ►M1 EC fertilizers ◀ must continue to satisfy the requirements of Annex I to Directive 76/116/EEC.

2. Where the trace elements are the normal ingredients of the raw materials intended to supply major and secondary elements, their declaration shall be optional, provided that these trace elements are present at least in the minimum quantities specified in Chapters C and D of the Annex to this Directive.

Article 4

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

- (a) ►M1 'EC FERTILIZER' ◀ in capital letters,
- (b) the designation of the type of fertilizer:
 - either in accordance with Chapter A of the Annex,
 - or as the type designation 'Mixture of trace elements', followed by the names of the trace elements present or their chemical symbols,
 - or in accordance with Annex I to Directive 76/116/EEC, by adding to the type designation either:
 - 'with trace elements',
 - or
 - 'with' followed by the name or names of the trace elements present or by their chemical symbols.

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

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

- (c) the guaranteed content in respect of each nutrient and the guaranteed content expressed as forms and/or solubilities where these are specified in the Annexes to Directive 76/116/EEC and, for each trace element present, as required by Article 6;
- (d) where all or part of the trace element is chemically linked with an organic molecule, the name of that element is then followed by one of the following qualifiers:
 - 'chelated by ...' (name of chelating agent or its abbreviation as set out in Chapter E (1) of the Annex),
 - 'complexed by ...' (name of complexing agent as set out in Chapter E (2) of the Annex).

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

Trace-element content shall be expressed both in words and by the appropriate chemical symbols.

The following shall be entered on the label or accompanying papers, with regard to the products appearing in Chapters A and B of the Annex below the obligatory or optional declarations: 'To be used

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

Article 5

Member States may require on their territory without impeding trade and on the responsibility of the person in charge of marketing that an indication be given of the dose rates and conditions of use suitable for the soil and crop conditions under which the fertilizer is used. This information must be clearly separated from the obligatory declarations provided for in Article 4.

Article 6

Member States shall require that the trace-element content of ► **M1** EC fertilizers ◀ placed on the market must be stated in the form of elements (B, Co, Cu, Fe, Mn, Mo, Zn).

The trace-element content of a fertilizer shall be declared in the following manner:

- (a) for the fertilizers referred to in Article 1 (1): in accordance with the requirements set out in Chapter A (column 6) of the Annex;
- (b) for the fertilizers referred to in Article 1 (2) and Article 3 by indicating:
 - the total content, expressed as a percentage by weight of the fertilizer, and
 - the water-soluble content, expressed as a percentage by weight of the fertilizer, where that solubility is at least half of the total content.

Where a trace-element is totally water-soluble, only the water-soluble content shall be declared.

The trace-element content of a fertilizer shall be determined under the conditions laid down in the methods of analysis provided for in Article 8 of Directive 76/116/EEC.

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

Article 7

The tolerance allowed in respect of the declared trace-element content shall be:

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

Article 8

Article 9 (1) of Directive 76/116/EEC is replaced by the following:

'Amendments required to adapt the Annexes to technical progress shall be adopted in accordance with the procedure laid down in Article 11.

Where such amendments are made, a fertilizer shall be included only if:

- (a) it does not adversely affect human or animal health or the environment;
- (b) it provides nutrients in an effective manner according to the needs of a particular crop or according to growing conditions of particular crops.'

Article 9

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within

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eighteen months of its notification. They shall forthwith inform the Commission thereof.

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

Article 10

This Directive is addressed to the Member States.

ANNEX

CHAPTER A

FERTILIZERS CONTAINING ONLY ONE TRACE ELEMENT

Note 1: A chelating agent may be designated by means of its initials as set out in Chapter E.

Note 2: If the product leaves no solid residue after being dissolved in water, it may be described as 'for dissolution'.

Note 3: Where a trace element is present in a chelated form, the pH range guaranteeing acceptable stability of the chelated fraction shall be stated.

No	Type designation	Data on method of production and essential ingredients	Minimum trace-element content (percentage by weight) Data on the expression of nutrients. Other requirements	Other data or type designation	Trace-element content to be declared. Solubilities. Other criteria
1	2	3	4	5	6
BORON					
1a	Boric acid	Product obtained by the action of an acid on a borate	14 % water-soluble B	Usual trade names may be added	Water-soluble boron B
1b	Sodium borate	Product obtained chemically and having as its essential ingredient a sodium borate	10 % water-soluble B	Usual trade names may be added	Water-soluble boron B
1c	Calcium borate	Product obtained partly from colemanite or pandermite, and having as its essential ingredient calcium borates	7 % total B Particle size: at least 98 % passing through a 0,063 mm sieve	Usual trade names may be added	Total boron (B)
1d	Boron ethanol amine	Product obtained from the reaction of boric acid with an ethanol amine	8 % water-soluble B		Water-soluble boron (B)
1e	Borated fertilizer in solution or suspension	Product obtained by dissolution or suspension in water of types 1a, 1b, 1d	2 % water-soluble B		Water-soluble boron (B)



1	2	3	4	5	6
COBALT					
2a	Cobalt salt	Product obtained chemically and having as its essential ingredient a mineral salt of cobalt	19 % water-soluble Co	The designation must include the name of the combined mineral anion	Water-soluble cobalt (Co)
2b	Cobalt chelate	Product obtained by combining cobalt chemically with a chelating agent	2 % water-soluble Co, at least 8/10 of which has been chelated	Nature of the chelating agent	Water-soluble cobalt (Co). Chelated cobalt (Co)
2c	Solution of cobalt fertilizer	Product obtained by dissolving types 2a and/or 2b in water	2 % water-soluble Co	The designation must include the name of the mineral anion and/or the nature of the chelating agent	Water-soluble cobalt (Co). Chelated cobalt (Co)
COPPER					
3a	Copper salt	Product obtained chemically and having as its essential ingredient a mineral salt of copper	20 % water-soluble Cu	The designation must include the name of the combined anion	Water-soluble copper (Cu)
3b	Copper oxide	Product obtained chemically and having as its essential ingredient copper oxide	70 % total Cu Particle size: at least 98 % passing through a 0,063 mm sieve		Total copper (Cu)
3c	Copper hydroxide	Product obtained chemically and having as its essential ingredient copper hydroxide	45 % total Cu Particle size: at least 98 % passing through a 0,063 mm sieve		Total copper (Cu)
3d	Copper chelate	Product obtained by combining copper chemically with a chelating agent	9 % water-soluble Cu of which at least 8/10 has been chelated	Nature of the chelating agent	Water-soluble copper (Cu). Chelated copper (Cu)
3e	Copper-based fertilizer	Product obtained by mixing types 3a, 3b, 3c or 3d and, if required, filler that is neither nutrient	5 % total Cu Particle size: at least 98 % passing through a 0,063 mm sieve	Nature of the chelating agent	Total copper (Cu) Water-soluble copper (Cu) if this accounts for at least one-quarter of the total copper. Chelated copper (Cu)



1	2	3	4	5	6
3f	Copper fertilizer solution	Product obtained by dissolving types 3a and/or 3d in water	3 % water-soluble Cu	Nature of the chelating agent	Water-soluble copper (Cu), a proportion of which is chelated copper (Cu)

IRON

4a	Iron salt	Product obtained chemically and having as its essential ingredient a ferrous salt (Fe II)	12 % water-soluble Fe	The designation must include the name of the combined anion	Water-soluble iron (Fe)
4b	Iron chelate	Product obtained by combining iron chemically with a chelating agent	5 % water-soluble Fe, of which at least 8/10 has been chelated	Nature of the chelating agent	Water-soluble iron (Fe). Chelated iron (Fe)
4c	Iron fertilizer solution	Product obtained by dissolving types 4a and/or 4b in water	2 % water-soluble Fe	Nature of the chelating agent	Water-soluble iron (Fe). Chelated iron (Fe)

MANGANESE

5a	Manganese salt	Product obtained chemically and having as its essential ingredient a mineral salt of manganese (II)	17 % water-soluble Mn	The designation must include the name of the combined anion	Water-soluble manganese (Mn)
5b	Manganese chelate	Product obtained by combining manganese chemically with a chelating agent	5 % water-soluble Mn, of which at least 8/10 has been chelated	Nature of the chelating agent	Water-soluble manganese (Mn). Chelated manganese (Mn)
5c	Manganese oxide	Product obtained chemically and having as its essential ingredients manganese oxides	40 % total Mn Particle size: at least 80 % passing through a 0,063 mm sieve		Total manganese (Mn)
5d	Manganese-based fertilizer	Product obtained by mixing types 5a and 5c	17 % total Mn		Total manganese (Mn) Water-soluble manganese (Mn) if this accounts for at least one-quarter of the total manganese
5e	Fertilizer in manganese-based solution	Product obtained by dissolving types 5a and/or 5b in water	3 % water-soluble Mn	Nature of the chelating agent	Water-soluble manganese (Mn). Chelated manganese (Mn)



1	2	3	4	5	6
MOLYBDENUM					
6a	Sodium molybdate	Product obtained chemically and having as its essential ingredient sodium molybdate		35 % water-soluble Mo	Water-soluble molybdenum (Mo)
6b	Ammonium molybdate	Product obtained chemically and having as its essential ingredient ammonium molybdate	50 % water-soluble Mo		Water-soluble molybdenum (Mo)
6c	Molybdenum-based fertilizer	Product obtained by mixing types 6a and 6b	35 % water-soluble Mo		Water-soluble molybdenum (Mo)
6d	Molybdenum fertilizer in solution	Product obtained by dissolving types 6a and/or 6b in water	3 % water-soluble Mo		Water-soluble molybdenum (Mo)
ZINC					
7a	Zinc salt	Product obtained chemically and having as its essential ingredient a mineral salt of zinc	15 % water-soluble Zn	The designation must include the name of the combined anion	Water-soluble zinc (Zn)
7b	Zinc chelate	Product obtained by combining zinc chemically with a chelating agent	5 % water-soluble Zn	Nature of the chelating agent	Water-soluble zinc (Zn). Chelated Zinc (Zn)
7c	Zinc oxide	Product obtained chemically and having as its essential ingredient zinc oxide	70 % total Zn		Total zinc (Zn)
7d	Zinc-based fertilizer	Product derived from types 7a and 7b	30 % total Zn		Total zinc (Zn) Water-soluble zinc (Zn) if this accounts for at least one-quarter of the total zinc (Zn)
7e	Zinc-based solution	Product obtained by dissolving types 7a and 7b in water	3 % water-soluble Zn	Nature of the chelating agent	Water-soluble zinc (Zn). Chelated Zinc (Zn)

▼B**MINIMUM TRACE-ELEMENT CONTENT, PERCENTAGE WEIGHT OF FERTILIZER****CHAPTER B****SOLID OR FLUID MIXTURES OF TRACE ELEMENTS**

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

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

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

CHAPTER C**►M1 EC FERTILIZERS ◀ CONTAINING MAJOR AND/OR SECONDARY ELEMENTS WITH TRACE ELEMENTS APPLIED TO THE SOIL**

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

CHAPTER D**►M1 EC FERTILIZERS ◀ CONTAINING MAJOR AND/OR SECONDARY ELEMENTS WITH TRACE ELEMENTS FOR LEAF SPRAYS**

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

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CHAPTER E

LIST OF AUTHORIZED ORGANIC COMPLEXING AGENTS FOR TRACE ELEMENTS

Definition of complexed trace elements:

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

- a chelated product
- a complexed product

Authorized products:1. *Chelating agents:*

Sodium, potassium or ammonium acid or salts of:

ethylene diamine tetraacetic acid:	EDTA	$C_{10}H_{16}O_8N_2$
diethylene triamine pentaacetic acid:	DPTA	$C_{14}H_{23}O_{10}N_3$
ethylene diamine — di (O-hydroxyphenyl acetic) acid:	EDDHA	$C_{18}H_{20}O_6N_2$
hydroxy-2 ethylene diamine triacetic acid:	HEEDTA	$C_{10}H_{18}O_7N_2$
ethyldiamine-di (O-hydroxy P-methyl phenyl) acetic acid:	EDDHMA	$C_{20}H_{24}N_2O_6$
ethylene diamine di (5-carboxy-2-hydroxy-phenyl) acetic acid:	EDDCHA	$C_{20}H_{20}O_{10}N_2$

2. *Complexing agents* (*)

(*) List to be drawn up.