COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 08.05.2000
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Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the approximation of the laws of the Member States relating to food supplements

(presented by the Commission)

EXPLANATORY MEMORANDUM

1. A wide range of products, known under the term food supplements, diet integrators or others, are being marketed in Community Member States for a number of years. The national rules applicable to them may differ substantially. This has led to obstacles to intracommunity trade that the application of the principle of mutual recognition did not succeed in overcoming. Authorities restricting or prohibiting the marketing of such products justified their action on grounds of protection of public health. A substantial number of complaints from economic operators have been received by the responsible Commission services. In its Green Paper on Food Law the Commission announced its intention to initiate technical consultations on the need for, and possible scope of, Community legislation on these products. In June 1997 the Commission circulated widely a discussion paper on the subject and requested comments on the relevant issues. Many comments were received from Member States and other interested parties. These comments made it evident that it is necessary to adopt Community rules on these products marketed as foodstuffs. In the White Paper on Food Safety adopted by the Commission on 14 January 2000 it was announced that a proposal on the subject would be put forward by March 2000. The above comments were considered very carefully and provided valuable guidance in preparing this proposal that aims to ensure both a high level of health protection and the free circulation of the products concerned.

2. The products in question are usually concentrated sources of nutrients and other ingredients, alone or in combination and marketed in dose form. These ingredients include, among others, vitamins, minerals, amino acids, essential fatty acids, fibre, various plant and herbal extracts. The task of covering products containing all these ingredients would be enormous and very complicated. It has therefore been decided for practical reasons to deal at this stage in detail with products containing vitamins and minerals. The measures may be amended in the future to cover in detail products containing other nutrients and/or ingredients.

3. Although ideally a varied diet should and could, under normal circumstances, provide all the necessary nutrients for normal development and maintenance of a healthy life, changes in life-styles and dietary habits may lead to inadequacies of intakes of essential nutrients such as vitamins and minerals. A report prepared in the framework of the Scientific Co-operation (SCOOP) would suggest that this might be the case for one or more population groups in different countries when actual intakes are compared to nationally recommended intakes. Furthermore scientific research on the function of some essential nutrients, in particular vitamins and minerals, has recently established real or potential benefits to health that may accrue from the intake of recommended or higher than currently recommended levels of these nutrients. For the above reasons consumer demand for products with which to supplement the intake of nutrients deriving from the normal diet has substantially increased and subsequently such products proliferated in the market.

4. There is an important range of vitamin and mineral supplements in the market. They vary from single nutrient products of variable nutrient levels to multi-nutrient products also of variable nutrient levels for individual nutrients. Prevalence of one or the other product is determined by consumer preferences and differs from one Member State to another. In view of the nature of these products their acquisition is the result of conscious consumer choice. Although some would argue that the entire wide range of these products may not be necessary and may not offer proven nutritional benefits, it would not be appropriate to restrict this choice on such grounds. However this choice must be made exempt of any risks to health by ensuring that products that are put on the market are safe and must be facilitated by providing appropriate and correct information about these products through labelling. Ensuring that food is safe and providing adequate and clear information on the label have been two fundamental principles of Community food law. They are also in line with international agreements designed to prevent that technical legislation creates or results in unjustified barriers to trade to which the Community is a full party.

5. There is no real controversy as to the vitamins and minerals that are considered essential for the human organism. Therefore, it has been argued that it would be superfluous to impose a positive list of these nutrients that may be present in food supplements. However, some doubts might arise as to whether some nutrients, in particular minerals like boron, vanadium or other, are essential. It would be therefore appropriate, for the sake of clarity, to include such a positive list of vitamins and minerals. This list comprises those nutrients which the Scientific Committee for Food (SCF) in its report on Nutrient and Energy Intakes for the European Community (31st series) considers essential.

6. There are different chemical forms of a nutrient that can be used in the manufacturing of foods. Their choice is naturally limited by technological considerations such as colour, odour and other physicochemical choices. Their safety and bioavailability should be subsequently the criteria of selecting such substances for use. For this reason a positive list comprising those substances would appear necessary. The SCF has over the years on the basis of the above criteria approved a number of chemical substances that may be used in the manufacture of foods for infants and young children and in other foods for particular nutritional uses. It would seem reasonable that these substances could also be used in the manufacture of food supplements. It would be necessary, of course, to update this list rapidly, through technical measures adopted by the Commission, in order to take into account technological and scientific developments.

7. Another very important element regarding the safety of these products is the maximum levels of the vitamins and minerals they contain. These levels should therefore be stipulated in order to ensure their safety. Upper safe intake levels for some nutrients (for example vitamins A, D, B6 and folic acid, iron, selenium, zinc) may be close (up to five times) to amounts that are recommended as population reference intakes (PRI). Therefore for these few nutrients the PRIs should be taken into account when setting maximum levels in food supplements. For other nutrients adverse effects have been observed with

intakes far in excess of PRIs and yet for others such adverse effects have not been reported. In order to dispose of an authoritative scientific basis for setting maximum levels for vitamins and minerals in food supplements the Commission has asked the SCF to give its opinion on upper safe levels of vitamins and minerals. Another factor that should be taken into account when fixing these maximum levels is the intake of vitamins and minerals from other sources.

8. The setting of a minimum level of vitamins and minerals in these products is desirable in order to guarantee that food supplements contain a significant amount that would justify the intended purpose of the product, namely to supplement the normal diet. Once the principles for setting maximum and minimum limits have been agreed the adoption of specific limits for each nutrient, based on the opinion of the SCF, is a technical matter and should be delegated to the Commission.

9. Various names, some of them fanciful, have been used to describe these products such as food supplements, diet integrators, nutraceuticals, alicaments, etc. The first two terms are also mentioned in Community legislation (Directive 90/496/EEC on nutrition labelling) without being defined. It is believed that the inclusion of the term supplement in the name of the products in question would be best understood and denote their nature. Fanciful names could confuse or mislead the consumer and therefore would not be appropriate.

10. As mentioned above, excess intake of some vitamins and minerals may cause undesirable or adverse effects. In order to ensure the safety of these products upper levels per specified quantity of the product should be stipulated. It is of paramount importance, taking into account the above, that the label includes clear instructions about the use of the product, in particular the quantity to be consumed. Consumers should also be warned against exceeding suggested quantities to be consumed where, for a specific product, such practice could have detrimental effects for their health.

11. Food supplements are excluded from the scope of Directive 90/496/EEC on nutrition labelling. Therefore, the specific relevant rules must be stipulated. These products contain hardly any significant amounts of energy, protein, carbohydrate or fat and, therefore their declaration in the nutritional labelling would be irrelevant. Their nature and intended use, however, as sources of vitamins and minerals would justify that nutrition labelling for these nutrients should be compulsory. In any case, in practice this information is provided either voluntarily or because claims made would render it compulsory. For other foodstuffs, nutrient content per 100g or 100ml is declared. In the case of food supplements this information would be irrelevant, if not confusing, because these products are almost exclusively presented in unit dose form. Therefore, the nutrient content should be declared accordingly per quantity as suggested for daily consumption by the manufacturer and per unit dose.

12. Although there are legitimate claims that PRIs or RDAs are misused when applied to individuals, many consumers who pay attention to nutrition labelling have come to appreciate the declaration of the nutrient content as a percentage of a reference value. This information should therefore be mandatory as is the case with other foods that bear nutrition labelling. The reference values currently used at Community and international level are the RDAs established some years ago. For the sake of coherence of relevant information concerning vitamin and mineral content of food supplements and other foods containing vitamins and minerals, the reference values should be common. Therefore, the reference values appearing in the Annex to Directive 90/496/EEC should be used. It is stressed that this conclusion is imposed for reasons of coherence. The fact cannot be ignored, however, that the above list of nutrients and the reference values need to be reviewed and maybe extended, as appropriate, in the light of developments since their adoption.

13. For facilitating the provision of nutrition labelling for foodstuffs, Directive 90/496/EEC allows the nutrient values declared to be based on calculation from known or actual values of the ingredients used, on calculation from generally established and accepted food composition data or from the manufacturers analysis of the product. Because of the nature, the manufacturing processes and the intended use of food supplements, it is appropriate that the values of the nutrients declared in nutrition labelling should be based only on the manufacturer's analysis of the product.

14. It goes without saying that other provisions concerning labelling laid down in Directive 79/112/EEC and its subsequent amendments are applicable to food supplements and need not be repeated in this Directive. Directive 79/112/EEC provides that the labelling should not mislead the consumer. In this context, attention should be paid to ensure that the labelling of these products does not state or imply that a varied and adequate diet cannot provide sufficient quantities of nutrients. The Directive further provides that claims relating to prevention, treatment or cure of disease in the labelling, advertising and presentation of foodstuffs is, in general, prohibited. This remains entirely valid for food supplements. Further, it is considered that if any rules on claims were to be laid down they should apply to all foods and not only to any specific groups, with the exception of foods for particular nutritional uses. For this reason no specific provisions on claims are included in this Directive.

15. A number of national authorities are concerned that the proliferation of these products may render more difficult their task to adequately control them. In addition, they are concerned that increased availability and use of these products may have effects on the nutrient status of the population. Others are of the opinion that levels of intakes of nutrients from food supplements coupled to intakes from other sources such as fortified foods need to be closely monitored. These concerns are legitimate and justified. It would therefore be opportune to introduce a procedure of notification that would require manufacturers or importers of these products to inform the competent authorities of Member States when food supplements are placed on the market in their territories. Of course some Member States may have adequate means of dealing with the above issues. Given that the notification procedures in question could

be burdensome, Member States should have the possibility not to impose this obligation.

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the approximation of the laws of the Member States relating to food supplements

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission[1],

Having regard to the Opinion of the Economic and Social Committee[2],

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

(1) There is an increasing number of products marketed in the Community as foods containing concentrated sources of nutrients and presented for supplementing the intake of those nutrients from the normal diet.

(2) Those products are regulated in Member States by differing national rules that may impede their free movement, may create unequal conditions of competition, and thus have a direct impact on the functioning of the internal market. It is therefore necessary to adopt Community rules on those products marketed as foodstuffs.

(3) An adequate and varied diet could, under normal circumstances, provide all necessary nutrients for normal development and maintenance of a healthy life in quantities as those established and recommended by generally acceptable scientific data. However, surveys show that this ideal situation is not being achieved for all nutrients and by all groups of the population across the Community.

(4) Consumers, because of their particular lifestyles or for other reasons, may choose to supplement their intake of some nutrients through food supplements.

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1 OJ C

2 OJ C

(5) In order to ensure a high level of protection for consumers and facilitate their choice the products that will be put onto the market must be safe and bear adequate and appropriate labelling.

(6) There is a wide range of nutrients and other ingredients that might be present in food supplements including, but not limited to, vitamins, minerals, amino acids, essential fatty acids, fibre and various plant and herbal extracts. However, as a first stage, this Directive should only cover food supplements containing vitamins and minerals.

(7) Only vitamins and minerals normally found in and consumed as part of the diet and considered essential nutrients should be allowed to be present in food supplements although this does not mean that their presence therein is necessary. Controversy as to the identity of those essential nutrients that could potentially arise should be avoided. Therefore it is appropriate to establish a positive list of those vitamins and minerals.

(8) The chemical substances used as sources of vitamins and minerals in the manufacture of food supplements should be safe and also be available to be used by the body. For this reason, a positive list of those substances should also be established. Such substances as have been approved by the Scientific Committee for Food, on the basis of the said criteria, for use in the manufacture of foods intended for infants and young children and other foods for particular nutritional uses can also be used in the manufacture of food supplements.

(9) In order to keep up with scientific and technological developments it is important to revise the lists promptly, when necessary. Such revisions would be implementing measures of a technical nature and their adoption should be entrusted to the Commission in order to simplify and expedite the procedure.

(10) For vitamins and minerals excessive intakes may result in adverse effects and therefore necessitate the setting of maximum safe levels for them in food supplements, as appropriate. Those levels must ensure that the normal use of the products under the instructions of use provided by the manufacturer will be safe for the consumer.

(11) For that reason, when setting those maximum safe levels, account should be taken of the upper safe levels of the vitamins or minerals, as established by scientific risk assessment based on generally acceptable scientific data, of intakes of those nutrients from the normal diet and of the fact that for some nutrients upper safe levels may be close to the level that may be recommended for consumption. The latter consideration is of particular importance where generally acceptable scientific data prove that excess intake of the vitamins and minerals concerned cause adverse effects.

(12) Food supplements are purchased by consumers for supplementing intakes from the diet. In order to ensure that this aim is achieved, if vitamins and minerals are declared on the label of food supplements, they should be present in the product in a significant amount.

(13) The adoption of the specific values for maximum and minimum levels for vitamins and minerals present in food supplements, based on the criteria set out in this Directive and appropriate scientific advice, would be an implementing measure and should be entrusted to the Commission.

(14) General labelling provisions and definitions are contained in Council Directive 79/112/EEC of 18 December 1978 on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs for sale to the ultimate consumer[3], as last amended by Directive 97/4/EC of the European Parliament and of the Council[4], and do not need to be repeated. This Directive can therefore be confined to the necessary additional provisions.

(15) Council Directive 90/496/EEC of 24 September 1990 on nutrition labelling for foodstuffs[5] does not apply to food supplements. Information relating to nutrient content in food supplements is essential for allowing the consumer who purchases them to make an informed choice and use them properly and safely. That information should, in view of the nature of those products, be confined to the nutrients actually present and be compulsory.

(16) Given the particular nature of food supplements, additional means to those usually available to monitoring bodies should be available in order to facilitate efficient monitoring of those products.

(17) Since the measures necessary for the implementation of this Directive are measures of general scope within the meaning of Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission[6], they should be adopted by use of the regulatory procedure provided for in Article 5 of that Decision,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive concerns food supplements marketed in pre-packaged form as foodstuffs and presented as such.

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3 OJ L 33, 8.2.1979, p. 1.
4 OJ L 43, 14.2.1997, p. 21.
5 OJ L 276, 6.10.1990, p. 40.
6 OJ L 184, 17.7.1999, p. 23.

2. This Directive does not apply to:

(a) foods for particular nutritional uses covered by Council Directive 89/398/EEC[7];

(b) medicinal products covered by Council Directive 65/65/EEC[8].

Article 2

For the purposes of this Directive:

(a) "food supplements" means foodstuffs that are concentrated sources of nutrients as specified in (b), alone or in combination, marketed in dose form, whose purpose is to supplement the intake of those nutrients in the normal diet;

(b) "nutrients" means the following substances:

(i) vitamins listed in point 1 of Annex I,

(ii) minerals listed in point 2 of Annex I;

(c) "dose form" means forms such as capsules, tablets, pills and other similar forms, sachets of powder, ampoules of liquids and drop dispensing bottles.

Article 3

Member States shall ensure that the food supplements containing the nutrients listed in Article 2(b) may be marketed within the Community only if they comply with the rules laid down in this Directive.

Article 4

1. Only the vitamins and minerals listed in Annex I and the vitamin formulations and the permitted mineral substances listed in Annex II may be used for the manufacture of food supplements.

2. The criteria of purity for the substances, referred to in paragraph 1 shall be adopted in accordance with the procedure referred to in Article 13(2).

3. Modifications to the lists referred to in paragraph 1 shall be adopted in accordance with the procedure referred to in Article 13(2).

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7 OJ L 186, 30.6.1989, p. 27.
8 OJ 22, 9.2.1965, p. 369/65.

Article 5

1. Maximum amounts of vitamins and minerals present in food supplements per daily portion of consumption as recommended by the manufacturer shall be set taking the following into account:

   (a) upper safe levels of vitamins and minerals established by scientific risk assessment based on generally acceptable scientific data;

   (b) reference intakes of vitamins and minerals for the population, where these are close to the upper safe levels;

   (c) intakes of vitamins and minerals from other dietary sources.

2. To ensure that significant amounts of vitamins and minerals shall be present in food supplements minimum amounts per daily portion of consumption as recommended by the manufacturer shall be set, as appropriate.

3. The maximum and minimum amounts of vitamins and minerals referred to in paragraphs 1 and 2 shall be adopted in accordance with the procedure referred to in Article 13(2).

Article 6

1. The name under which products covered by this Directive are sold shall include the word "supplement" and the name of the category of the nutrient(s) characterising the product. The name of the category of the nutrient(s) may be completed or replaced by the specific name of the nutrient(s) characterising the product.

2. The labelling, presentation and advertising must not attribute to food supplements the property of preventing, treating or curing a human disease, or refer to such properties.

3. Without prejudice to the requirements of Directive 79/112/EEC, the labelling shall bear the following mandatory particulars:

   (a) the portion of the product recommended for daily consumption;

   (b) a warning as to the possible health risks, as the case may be, in exceeding the recommended portion for daily consumption;

   (c) a statement to the effect that food supplements should not be used as a substitute for a diversified diet.

4. When the form of presentation is similar to a pharmaceutical form as defined by pharmacopoeias, the statement "This is not a medicinal product" shall appear on the label.

Article 7

The labelling of food supplements shall not include any mention stating or implying that an adequate and diversified diet cannot provide appropriate quantities of nutrients.

Article 8

1. The amount of the nutrient(s) listed in Article 2(b) present in the product shall be declared in the labelling in numerical form. The units to be used shall be those specified in Annex I.

2. The amounts of the nutrient(s) declared shall be those per portion of the product as recommended for daily consumption on the labelling and per unit dose form, as appropriate. The amounts declared shall be those of the product as sold.

3. Information on vitamins and minerals shall also be expressed as a percentage of the reference values mentioned, as the case may be, in the Annex to Directive 90/496/EEC.

Article 9

1. The declared values mentioned in Article 8(1) and (2) shall be average values based on the manufacturer's analysis of the product.

   The rules for implementing this paragraph with regard in particular to the differences between the declared values and those established in the course of official checks shall be decided upon in accordance with the procedure referred to in Article 13(2).

2. The percentage of the reference values for vitamins and minerals mentioned in Article 8(3) may also be given in graphical form.

   Rules for implementing this paragraph may be adopted in accordance with the procedure referred to in Article 13(2).

Article 10

To facilitate efficient monitoring of food supplements, when a product is placed on the market the manufacturer or, where a product is manufactured in a third country, the importer, shall notify the competent authority of each Member State where the product is being marketed by forwarding it a model of the label used for the product.

Member States may not impose this requirement, if they can demonstrate to the Commission that notification is not necessary in order to monitor those products efficiently in their territory.

Article 11

1. Member States shall not, for reasons related to their composition, manufacturing specifications, presentation or labelling, prohibit or restrict trade in products referred to in Article 1 which comply with this Directive and where appropriate, with Community acts adopted in implementation of this Directive.

2. Without prejudice to the relevant provisions of the EC Treaty, in particular Articles 28 and 30 thereof, paragraph 1 shall not affect national provisions which are applicable in the absence of Community acts adopted in implementation of this Directive.

Article 12

1. Where a Member State, as a result of new information or of a reassessment of existing information made since this Directive or one of the implementing Community acts was adopted, has detailed grounds for establishing that a product referred to in Article 1 endangers human health though it complies with those provisions, that Member State may temporarily suspend or restrict application of the provisions in question within its territory. It shall immediately inform the other Member States and the Commission thereof and give reasons for its decision.

2. The Commission shall examine as soon as possible the grounds adduced by the Member State concerned and shall consult the Member States within the Standing Committee for Foodstuffs, and shall then deliver its opinion without delay and take appropriate measures.

3. If the Commission considers that amendments to this Directive or to the implementing Community acts are necessary in order to remedy the difficulties mentioned in paragraph 1 and to ensure the protection of human health, it shall initiate the procedure referred to in Article 13(2) with a view to adopting those amendments. The Member State that has adopted safeguard measures may in that event retain them until the amendments have been adopted.

Article 13

1. The Commission shall be assisted by the Standing Committee for Foodstuffs instituted by Decision 69/414/EEC[9].

2. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Decision 1999/468/EC shall apply, in compliance with Article 7(3) and Article 8 thereof.

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9 OJ L 291, 19.11.1969, p. 9.

3. The period provided for in Article 5(6) of Decision 1999/468/EC shall be three months.

Article 14

Provisions that may have an effect upon public health shall be adopted after consultation with the Scientific Committee for Food.

Article 15

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 May 2002. They shall forthwith inform the Commission thereof.

Those laws, regulations and administrative provisions shall be applied in such a way as to:

(a) permit trade in products complying with this Directive, from 1 June 2002 at the latest;

(b) prohibit trade in products which do not comply with the Directive, from 1 June 2004 at the latest.

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.

Article 16

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

Article 17

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament	*For the Council*
The President	*The President*

ANNEX I

Vitamins and minerals which may be used in the manufacture of food supplements

1. Vitamins

Vitamin A (µg RE)
Vitamin D (µg)
Vitamin E (mg α-TE)
Vitamin K (µg)
Vitamin B1(mg)
Vitamin B2(mg)
Niacin (mg NE)
Pantothenic acid (mg)
Vitamin B6 (µg)
Folic acid(µg)
Vitamin B12 (µg)
Biotin (µg)
Vitamin C (mg)

2. Minerals

Calcium (mg)
Magnesium (mg)
Iron (mg)
Copper (µg)
Iodine (µg)
Zinc (mg)
Manganese (mg)
Sodium (mg)
Potassium (mg)
Selenium (µg)
Chromium (µg)
Molybdenum (µg)
Fluoride (mg)
Chloride (mg)
Phosphorus (mg)

ANNEX II

Vitamin and mineral substances which may be used in the manufacture of food supplements

1. Vitamins

VITAMIN A

- retinol
- retinyl acetate
- retinyl palmitate
- beta-carotene

VITAMIN D

- cholecalciferol
- ergocalciferol

VITAMIN E

- D-alpha-tocopherol
- DL-alpha-tocopherol
- D-alpha-tocopheryl acetate
- DL-alpha-tocopheryl acetate
- D-alpha-tocopheryl acid succinate

VITAMIN K

- phylloquinone (phytomenadione)

VITAMIN B1

- thiamin hydrochloride
- thiamin mononitrate

VITAMIN B2

- riboflavin
- riboflavin 5'-phosphate, sodium

NIACIN

- nicotinic acid
- nicotinamide

PANTOTHENIC ACID

- D-pantothenate, calcium
- D-pantothenate, sodium

- dexpanthenol

VITAMIN B6

- pyridoxine hydrochloride
- pyridoxine 5'-phosphate

FOLIC ACID

- pteroylmonoglutamic acid

VITAMIN B12

- cyanocobalamin
- hydroxocobalamin

BIOTIN

- D-biotin

VITAMIN C

- L-ascorbic acid
- sodium-L-ascorbate
- calcium-L-ascorbate
- potassium-L-ascorbate
- L-ascorbyl 6-palmitate

2. Minerals

calcium carbonate
calcium chloride
calcium salts of citric acid
calcium gluconate
calcium glycerophosphate
calcium lactate
calcium salts of orthophosphoric acid
calcium hydroxide
calcium oxide

magnesium acetate
magnesium carbonate
magnesium chloride
magnesium salts of citric acid
magnesium gluconate
magnesium glycerophosphate
magnesium salts of orthophosphoric acid
magnesium lactate
magnesium hydroxide
magnesium oxide
magnesium sulphate

ferrous carbonate
ferrous citrate
ferric ammonium citrate
ferrous gluconate
ferrous fumarate
ferric sodium diphosphate
ferrous lactate
ferrous sulphate

ferric diphosphate (ferric pyrophosphate)
ferric saccharate
elemental iron (carbonyl+electrolytic+hydrogen reduced)

cupric carbonate
cupric citrate
cupric gluconate
cupric sulphate
copper lysine complex

sodium iodide
sodium iodate
potassium iodide
potassium iodate

zinc acetate
zinc chloride
zinc citrate
zinc gluconate
zinc lactate
zinc oxide
zinc carbonate
zinc sulphate

manganese carbonate
manganese chloride
manganese citrate
manganese gluconate
manganese glycerophosphate
manganese sulphate

sodium bicarbonate
sodium carbonate
sodium chloride
sodium citrate
sodium gluconate
sodium lactate
sodium hydroxide
sodium salts of orthophosphoric acid

potassium bicarbonate
potassium carbonate
potassium chloride
potassium citrate
potassium gluconate
potassium glycerophosphate
potassium lactate
potassium hydroxide
potassium salts of orthophosphoric acid

sodium selenate
sodium hydrogen selenite
sodium selenite

chromium (III) chloride
chromium (III) sulphate

ammonium molybdate (molybdenum (VI))
potassium molybdate (molybdenum (VI))

potassium fluoride
sodium fluoride