



FERTILIZER INDUSTRY FEDERATION OF AUSTRALIA

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Draft Code of Practice for Fertilizer Description & Labelling

Background

As part of FIFA's involvement in the Australian Government's Fertilizer Working Group (FWG), FIFA has been working to harmonize fertilizer regulations across State jurisdictions. The FWG, which includes representatives from each of the States, has succeeded in harmonizing heavy metal levels but there are still a large number of inconsistencies between the states including product labeling and the requirements and wording of important warning statements.

The members of the Fertilizer Working Group have agreed in principle to the development of an Australian Standard or Industry Code of Practice (COP) that would specify the appropriate description and labeling for fertilizers. States could then remove the detail from their regulations, and refer to the standard, resulting in harmonization.

The States are expected to continue to include public interest measures such as maximum permissible concentrations of certain impurities (MPC's), and OH&S, environmental and food safety warnings in their regulations, and these are mirrored in the COP.

The COP covers matters that are of concern from a fair trading perspective with obvious commercial benefits for users and bona fide suppliers. Consistent description of fertilizer content and characteristics is also important for management of food safety and environmental risks.

Separately, FIFA members have agreed to develop a code of practice for pack size in response to occupational health and safety issues. It makes sense to combine these two initiatives into a single code of practice.

Version

At a meeting on August 14, 2008, the FWG agreed that the States would review this version of the COP to determine any areas where it conflicts with current regulation. A number of issues have also been identified for future discussion as part of a broader review of fertilizer regulation. These issues have been inserted in blue boxes and will be removed from the COP before it is adopted by the industry.

Code of Practice for Fertilizer Description & Labelling

1. Scope

This code of practice applies to any substance that is manufactured, represented, supplied or used as a means of directly or indirectly fertilizing the soil and or supplying nutrients to plants.

A separate code of practice is being developed for substances that condition the soil by altering its chemical, physical or biological composition. However, label information on the nutrient content of soil ameliorants, for example calcium and magnesium, should also comply with this code of practice.

2. The Label

The purpose of the label is to provide information to users in a clear, consistent and legible format.

1.1. Printing

- 1.1.1. The label is to be in English.
- 1.1.2. Lettering is to be clearly legible.
- 1.1.3. Lettering is to be indelible.
- 1.1.4. Lettering is to be in a distinctly contrasting colour to the background colour.
- 1.1.5. The size of characters shall be proportional to the size of the label, invoice or delivery docket, but not less than 2 millimetres high.
- 1.1.6. The size of characters used to denote the net contents of packages which have at least one dimension (breadth, length or height) greater than 360mm should not be less than 4.8mm high.
- 1.1.7. Information that is printed on a label, invoice or delivery docket in English may be repeated on the label or invoice in another language.
- 1.1.8. If a fertilizer is sold in a package, the printing is to be on the outside face of the package or on a label attached to the outside of the package and easily read without opening the package.

1.2. Delivery of labels to end users for bulk fertilizers.

- 1.2.1. The label is to form part of the invoice or delivery docket, but may be provided at the same time or prior to delivery on a separate sheet.
- 1.2.2. Where the end user does not take delivery of the product the label is to be faxed, posted or otherwise delivered directly to the user prior to or within 24 hours of dispatch of the product
- 1.2.3. Where multiple deliveries to fill a single order of the same product to a customer occur the label need only be supplied with the first delivery.

3. Naming of Fertilizers

Standards for naming are required to prevent the names of fertilizers misleading consumers about their content.

A fertilizer is to be named so as to make the fertilizer easily distinguishable from all other fertilizers.

The name of a fertilizer is not to be inappropriate or misleading.

For a fertilizer that contains any of the nutrients N, P, K or S above the minimum level for inclusion on the label and for which the level of inclusion is stated (see Section 5) then the concentration of N, P, K and S, including zero values where no claim is made for inclusion, are to be printed directly below the product name, enclosed in parenthesis and separated by hyphens in the order N-P-K-S. The values are to be whole numbers (%), rounded down from and including the mid range (i.e. for 0.5 round down). The lettering for the concentration must be at least 50% of the size of the lettering for the name.

4. Basis of Analysis

For all elements the concentration should be stated:

- 1.3. As a percentage of the element (not the oxide as is the case in some countries).
- 1.4. For solid fertilizers, percentage on a weight for weight basis as supplied.
- 1.5. For liquid fertilizers, on a weight for volume basis, either as percentage weight for volume or as grams per litre with the method to be stated. (eg. 4.1% w/v or 41 g/L)
- 1.6. For anhydrous ammonia on a weight for weight basis, i.e. 82% N.

5. Minimum Levels for Inclusion of Nutrients

Setting minimum levels for allowable inclusion of nutrients on the label prevents misleading claims that a product contains a nutrient when the concentration is too low to provide any recognised nutritional benefit.

Nutrients may only be included on the label if they meet or exceed the concentrations listed in the tables below. A nutrient may be present above these concentrations but not claimed by the manufacturer/supplier in which case they will not appear on the label.

Minimum nutrient concentrations in solid fertilisers

Nutrient	Minimum (%)
N, P, K, S, Ca, Mg, Si	0.5
Fe	0.1
Cu, Mn, Zn	0.05
B	0.02
Mo, Co, Se	0.001

Minimum nutrient concentrations in liquid fertilisers

Nutrient	Minimum (%)
N, P, K, S, Si	0.1
Ca, Mg	0.01
B, Cu, Fe, Mn, Zn,	0.005
Co, Se	0.001
Mo	0.0005

6. Forms of Nutrient

The form(s) in which claimed nutrients are present and the percentage of each must be stated on the label.

Nutrient	Forms to be shown
Nitrogen	N as nitrate N as ammonium N as urea N in any other form (form to be stated) N Total
Phosphorus	P as water soluble P as citrate soluble* P as citrate insoluble* P Total
Potassium	K as chloride K as nitrate K as phosphate K as sulphate K as carbonate K as thiosulphate K in any other form (form to be stated) K Total
Calcium	Ca as carbonate Ca as hydroxide Ca as oxide Ca as sulphate Ca as nitrate Ca as chloride Ca as superphosphate (or phosphate) Ca as silicate Ca in any other form (form to be stated) Ca Total
Magnesium	Mg as carbonate Mg as hydroxide Mg as oxide Mg as silicate Mg as sulphate Mg as nitrate Mg as chloride Mg in any other form (form to be stated) Mg as total
Sulphur	S as sulphate S as elemental S in any other form (form to be stated) S as total
Silicon	Si (form to be stated)

Nutrient	Forms to be shown
Micro-nutrients as straight products, dry blend or when no chemical interaction occurs	The various forms composing the total analysis must be stated along with the concentration of each form. For chelates, the type of chelate should be stated.
Micro-nutrients added during a manufacturing process and for which the final form is not known.	The name of the micro-nutrient and the statement – Added during manufacturing process as [state form] and chemical interactions may have changed the form
*Citrate solubility is to be determined in ammonium citrate.	

7. Tolerances

Fertilizers are not homogeneous and will contain variation in composition and analysis within parcels of product. Good practice manufacture and blending should produce product within the tolerances from stated analysis listed in the table below.

Nutrient Concentration (%)	Tolerance (%)
> 40	2.5
30 – 40	3.5
20 – 30	5
10 – 20	7
1 – 10	10
< 1 (except Mo)	15
< 1 (Mo)	30

Note that there are no tolerances for impurities, they must always be below the Maximum Permissible Concentration.

The current tolerance levels vary from those adopted in Europe and the USA and this should be examined in any review of regulation.

8. Impurities – Maximum Permissible Concentrations

Certain impurities occur in fertilizer products due to their occurrence in the source material or as a product of the manufacturing process. For impurities of concern maximum permissible concentrations (MPC's) have been set. These levels must not be exceeded.

Cadmium (Cd)	
Fertilizer Type	MPC
Phosphatic Fertilizer (2% P or higher)	300mg Cd/kg phosphorus
Trace Elements	50mg Cd/kg product
Other Fertilizers	10mg Cd/kg product
Lead (Pb)	
Fertilizer Type	MPC
Wholly Constituted of Trace Elements	2000mg Pb/kg product
Partially Constituted of Trace Element	500mg Pb/kg product
Other Fertilizer	100mg Pb/kg product
Mercury (Hg)	
Fertilizer Type	MPC
All	5mg Hg/kg product
Fluorine (F)	
Fertilizer Type	MPC
Superphosphate	2.5%
Rock Phosphate	4.0%

Note that the MPC's for fluorine are not consistent across states and that only two fertilizer products are covered. This will be considered as part of the CSIRO Contaminants in Fertilizers project.

The application of MPC's to liquid products will requires some consideration. MPC's currently apply to products as sold, however it may be more sensible to apply the MPC's to the dry weight of the product to prevent avoidance by dilution. This should be considered in any review of regulation

9. Statement of Concentration and Warning Statements

Certain impurities and some nutrients whilst otherwise acceptable present risks in certain use situations. Warning statements are provided to inform users of these risks and these warnings are triggered by a concentration level. The concentration of the impurity or nutrient is to be stated on the label as summarized in the following table.

Impurity Concentration to be stated on the label.			
Fertilizer	Impurity	Trigger Concentration	Form
Urea	Biuret	Always	g biuret/kg N
Phosphatic	Fluorine	If > 40g F/kg P.	F% and as g F/kg P.
All	Molybdenum	If > 0.001%	%
All	Selenium	If > 0.001%	%
All non phosphatic	Cadmium	If > 1 mg/kg	mg/kg
Phosphatic (>2%P)	Cadmium	If > 1mg/kg	mg/kg and as mg Cd/kg P
All	Lead	If > 20 mg/kg	mg/kg
All	Mercury	If > 0.2 mg/kg	mg/kg

A "WARNING" caption or heading should appear on the label, with the appropriate warning statements as detailed in the following table.

Fertilizer	Impurity / Issue	Trigger Concentration	Warning Statement
All Solid Fertilizers	Dust	Always	Do not swallow. The dust from this product may act as an irritant. Avoid inhalation and contact with the eyes and skin.
All Liquid Fertilizers	Vapour/ Spray	Always	Do not swallow. The spray from this product may act as an irritant. Avoid inhalation and contact with the eyes and skin.
Urea			
For fertilizers containing urea that may be foliar-applied.	Biuret	< 10 g/kg of N	No warning statement is required.
		Between 10 g and 20 g/kg N	This fertilizer contains biuret. Repeated foliar sprays may cause damage to citrus.
		Between 20 and 30 g/kg N	This fertilizer contains biuret. It is not recommended for repeated foliar applications on annual or perennial horticultural crops.
		> 30 g/kg N	This fertilizer contains biuret. It is not recommended for foliar application except on turf.

Fertilizer	Impurity / Issue	Trigger Concentration	Warning Statement
For fertilizers that contain urea but are not intended for foliar application.	Biuret		This fertilizer is for soil application only. Do not use in foliar sprays.
Phosphorus Fertilizers	F	40g F/kg P	This product contains fluorine as an impurity. Do not feed this product to livestock or use in stock feed mixtures. If top dressing pastures do not graze for 3 weeks or until rain or irrigation is received.
Fertilizer containing Phosphorous Acid and/or its salts containing the Phosphite Ion.			Use of this product in crops for which a Phosphorous Acid Maximum Residue Level has not been established may cause detectable levels in farm produce and adversely affect saleability. It must not be used in foliar sprays.
Pasture Fertilizers			
Containing Molybdenum	Mo	> 0.001% Mo.	Excessive use of molybdenum (Mo) can be harmful to stock. Plant levels of Mo can be high for 4 weeks after application. It is advisable to keep stock off treated areas for this period. Molybdenum application may induce copper deficiency in grazing animals. This is most likely to occur on sandy soils low in copper. Check rate and frequency of molybdenum use with appropriate authorities.
Containing Selenium	Se	> 0.001% Se	Excessive use of selenium (Se) can be toxic to livestock. This product should not be used if selenium deficiency does not exist in stock grazing on the area where it is to be applied. Do not allow stock access to spilt or unused fertilizer. This product must not be applied at a rate greater than that stated on the label or advice note.
Soluble and Liquid Fertilizers	Pb	>500mg Pb/kg	For soil application only. This product is unsuitable for use as a foliar spray.
All Fertilizers	Cd	> 1 mg/kg	This product contains heavy metal impurities. Its use may lead to an accumulation of cadmium in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may exceed the maximum limits allowed in food standards. In pasture, the offall from grazing animals may also exceed these limits.
	Pb	> 20 mg/kg	This product contains heavy metal impurities. Its use may lead to an accumulation of lead in the soil.

Fertilizer	Impurity / Issue	Trigger Concentration	Warning Statement
	Hg	> 0.2 mg/kg	This product contains heavy metal impurities. Its use may lead to an accumulation of mercury in the soil.
	Cd & Pb	Each element as above	This product contains heavy metal impurities. Its use may lead to an accumulation of cadmium and lead in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may exceed the maximum limits allowed in food standards. In pasture, the offal from grazing animals may also exceed these limits.
	Cd & Hg	Each element as above	This product contains heavy metal impurities. Its use may lead to an accumulation of cadmium and mercury in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may exceed the maximum limits allowed in food standards. In pasture, the offal from grazing animals may also exceed these limits.
	Pb & Hg	Each element as above	This product contains heavy metal impurities. Its use may lead to an accumulation of lead and mercury in the soil.
	Cd & Pb & Hg	Each element as above	This product contains heavy metal impurities. Its use may lead to an accumulation of cadmium, lead and mercury in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may exceed the maximum limits allowed in food standards. In pasture, the offal from grazing animals may also exceed these limits.
Phosphorus Fertilisers that may be used as Stock Feed Supplements	Cd	>100mg Cd/kg P	<i>Add following text to above Statements:</i> This product should not be fed to livestock or used in stock feed mixtures.

The application of trigger concentrations and statement of concentration to liquid products requires some consideration. They currently apply to products as sold except Victoria where concentrations are to be stated on a dry basis. It may be more sensible to apply the trigger concentration to the dry weight of the product whilst stating the concentration on an as sold basis. This should be considered in any review of regulation.

10. Weight and Volume

For solid fertilizers the net weight of the fertilizer is to be included on the label in metric units in the format: Net weight: [the weight] [the unit of weight].

For liquid fertilizers the volume of the fertilizer in litres is to be included on the label in the format: [the volume] L.

11. Physical Description

The physical qualities of some fertilizers are important in predicting their efficacy.

Elemental sulphur, phosphate rock, and other fertilizers with low solubility in water, are to describe the particle size distribution as the **minimum** percentage by weight in the following size ranges to be determined by sieving.

- < 0.25mm
- 0.25mm to 0.50mm
- 0.50mm to 1.00mm

12. Contact Information

The label should include the name and Australian address of the manufacturer, importer, wholesaler or retailer.

13. Additional Information

Companies are encouraged to provide additional information that will assist users in making informed decisions about productivity, health, safety and environmental outcomes. Such additional information must not contradict or confuse any of the information required to be included on the label by this code of practice.

14. Compliance Statement

Companies are encouraged to include the following statement at the foot of the label:

“This label complies with the Fertilizer Industry Code of Practice for Fertilizer Description and Labelling.”

15. Package Size

This code of practice applies to all package sizes sold to end users.

The maximum package size for manual handling to comply with this code of practice is 25kg effective from July 1, 2010. Companies are encouraged to adopt this maximum at the earliest opportunity.

16. Custom Blends

Custom Blends must be labeled in accordance with this Code of Practice.

Alternatively, the Delivery Docket should list all the ingredients and their amount (kg or tonnes) or concentration (%) in the blend. A copy of the label Information, in accordance with this code of practice, for each ingredient should then be attached to the Delivery Docket.

17. Appendix I Example Label

FIFA Fantastica Complete + (16-5-12-6)

Nitrogen	
Nitrate	7.8%
Ammonium	7.8%
Total Nitrogen	15.6%
Phosphorus	
Water Soluble	4.0%
Citrate Soluble	1.0%
Citrate Insoluble	0.1%
Total P	5.1%
Potassium as sulphate	11.9%
Sulphur as sulphate	6.5%
Calcium as phosphate	3.7%
Zinc as oxide	2.1%

Fluorine (maximum)	0.75% : 145g F/kg P
Cadmium (maximum)	35 mg/kg : 70mg Cd/kg P
Lead (maximum)	20mg/kg
Mercury (maximum)	0.6mg/kg

!! Warning Statements !!

Do not swallow. The dust from this product may act as an irritant. Avoid inhalation and contact with the eyes and skin.

This product contains fluorine as an impurity. Do not feed this product to livestock or use in stock feed mixtures. If top dressing pastures do not graze for 3 weeks or until rain or irrigation is received.

This product contains heavy metal impurities. Its use may lead to an accumulation of cadmium and mercury in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may exceed the maximum limits allowed in food standards. In pasture, the offal from grazing animals may also exceed these limits.

Manufactured by:
FIFA
Level 2, 1 Hobart Place
Canberra ACT 2601

Net weight: 25kg

This label complies with the Fertilizer Industry Code of Practice for Fertilizer Description and Labeling.