
GOVERNMENT NOTICE

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

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FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947
(ACT No. 36 OF 1947)

REGULATIONS REGARDING FERTILIZERS

I, Tina Joemat-Pettersson do, under section 23 of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947), made the regulation schedule



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SCHEDULE

PART I: GENERAL

Definitions

1. Words and phrases in these regulations shall have the meaning assigned hereto in the Act, and unless the context otherwise indicates -

"Act" means the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947);

"activity index (AI)" means the amount of cold water insoluble nitrogen (CWIN) which is soluble in hot water in a urea formaldehyde fertilizer and reflects the rate at which CWIN will become available;

"agricultural liming material" means substances of which the calcium and magnesium compounds have the ability to reduce soil acidity and contain no harmful elements;

"amorphous lime" means soft, porous liming materials originating mainly from secondary deposits (as opposed to crystalline, non-porous liming materials mainly of primary origin);

"analysis certificate" means a certificate issued by a ISO 17025 accredited laboratory or AgriLASA **certified for, the relevant analysis**, indicating the full chemical and/or physical composition for the particular fertilizer, as required by the Registrar;

"application fee" means monies that, in terms of these regulations, are payable for the registration of fertilizers and the annual renewal of such registrations and also include monies payable for the mixing and sale of prescription mixtures;

"Ash" means inorganic substances remaining after all the organic substances have been removed (loss on ignition);

"blender" means a manufacturer or person who mixes registered fertilizers for sale or someone who mixes such fertilizers on prescription for someone. **"Mixer"** has the same meaning;

"bulk blending" means the mixing of **dry and liquid** fertilizers;

"bulk" means the packaging of a fertilizer other than in a sealed container;

"calcite" means calcium carbonate as it occurs in nature, with a maximum of 9 g/kg magnesium and a minimum of 380 g/kg calcium;

"calcium carbonate equivalent (CCE)" means the acid neutralizing ability of an agricultural liming material expressed as a percentage of the acid neutralising ability of pure calcium carbonate;

"calcium carbonate" means the carbonate of calcium that contains 400 g/kg calcium;

"calcium hydroxide" means the hydroxide of calcium that contains 530 g/kg calcium;

"calcium oxide" means the oxide of calcium that contains 700 g/kg calcium;

"chelate" means the product of a chemical reaction between a metal cation and a chelating agent in which the cation is in a normal oxidation state and is attached to the chelating agent through co-ordinate covalent bonds;

"chelating agent" means a molecule having two or more sites which donate electron pairs to a central metal cation and is large enough to form a five or six membered ring structure such as EDTA (ethylenediaminetetraacetic acid), NTA (nitrilo-triacetic acid) and IDS (iminodisuccinic acid);

"chemically compounded fertilizer" means a substance which, without it being mixed with another substance, contains one or more of the plant nutrient nitrogen (N), phosphorus (P) or potassium (K), provided that the total plant nutrient content of such fertilizer should be at least 1/3 of the nominal value of a similar pure fertilizer and that all macro-elements that it contains in registerable amounts may be registered;

"complex" means the product of a chemical reaction between a metal cation and a complexing agent, such as metal ions with polyphosphates, lignin sulphate and ammonia;

"complexing agent (sequestering agent)" means a molecule which reacts with a metal cation to form a product of sufficient stability that the cation does not undergo any of its typical reactions such as precipitation in basic solutions;

"composite sample" means the combined incremental samples taken from the same sampled portion;

"compost" means a stabilised, homogenous, fully decomposed substance of animal or plant origin to which no plant nutrients have been added and that is free of substances or elements that could be harmful to man, animal, plant or the environment;

"container" means the packaging in which a measured amount of a fertilizer is offered for sale;

"custom mix" means a mixture compiled on the written advice of a qualified person for a specific client and such mixture must be of registered raw materials mixed at the written request of a specific client. Prescription mixture shall have the same meaning;

"dry matter basis" means, in the case of liming materials dried at 105°C to constant mass, provided that in the case of substances that react with carbon dioxide (CO₂) the atmosphere in the oven be replaced with an inert gas such as nitrogen (N₂);

"dry sieving" means the lime samples screened dry on a sieve shaker according to SABS method;

"enrich" means the addition of registered inorganic fertilizers to registered organic fertilizers in order to raise the plant nutrient content of the organic fertilizer, provided that the total N, P and K must be a minimum of 100 g/kg and "enriched" has the same meaning;

"enriched organic fertilizer" means a mixture of registered organic fertilizer with registered inorganic fertilizer that contains a minimum of 330 g/kg organic fertilizer, excluding urea;

"fertilizer" means any substance which is intended or offered to be used for improving or maintaining the growth of plants or the productivity of the soil;

"fertilizer group" means the category under which a particular fertilizer falls. Fertilizers are categorised as follows:

Group 1 which is a fertilizer containing a total equal or greater than 100 g/kg of N, P or K or any combination thereof; or

Group 2 which is a fertilizer containing a total of less than 100 g/kg of N, P or K or any combination thereof or any other recognised plant nutrient(s) in acceptable amounts as indicated in Tables 1 – 9 and 13 – 15;

Group 3 which is a fertilizer containing natural or synthetic substance(s) or organism(s) that improve(s) or maintain(s) the physical, chemical or biological condition (fertility) of the soil; and "soil Improver" has the same meaning;

"fertilizer mixture" means a physical mixture of two or more chemically compounded fertilizers or organic fertilizers that contain one or more of the plant nutrients nitrogen (N), phosphorus (P) and potassium (K) as indicated in the tables (Annexure A);

"final samples" means a replicate representative part of the reduced sample or, where no intermediate reduction is required, the composite sample maybe regarded as identical sub-samples of the sampled portion;

"fulvic acid" means the organic substances of composition which remain in solution when an aqueous, alkaline extract of organic matter or soil is acidified;

"Guaranteed analysis" means the stated minimum and/or maximum nutrient value of a fertilizer;

"granules" means products formed by layering or conglomeration under controlled conditions to form almost spherical particles;

"**guano**" means the excrement of seabirds, as it occurs in nature;

"**qualified person**" means a person registered as Professional Natural Scientist with the South African Council for Natural Scientific Professions.

"**house and garden fertilizer**" means a fertilizer manufactured, recommended, packaged and offered for sale for use on pot plants and in home gardens and not intended for agricultural use;

"**humates**" means salts of humic acids;

"**humic acid**" means a mixture of dark-coloured substances of undefined composition extracted from soil with dilute alkali and precipitated by acidification to a pH of 1-2 as well as similar material in coal deposits and other organic matter;

"**invoice**" means an accompanying letter, delivery note or weighbridge ticket, receipt note or receipt;

"**label**" means any written, printed or graphic representation attached to a container of a fertilizer or produced on a container in any possible manner and which states the details required in terms of these regulations for the particular fertilizers and "**labelled**" has the same meaning;

"**low chlorine**" means a fertilizer mixture with the maximum chloride content as prescribed in regulation 30(2);

"**macro-element**" means any of the elements nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), and sulphur (S);

"**macro-pellet**" means particle sizes that are noticeably larger than those of pellets;

"**magnesite**" means magnesium carbonate, as it occurs in nature, that contains a maximum of 10 g/kg calcium and a minimum of 275 g/kg magnesium;

"**magnesitic**" means magnesium carbonate that contains a minimum of 190 g/kg magnesium;

"**magnesium carbonate**" means the carbonate of magnesium that contains 280 g/kg magnesium and no calcium;

"**magnesium hydroxide**" means the hydroxide of magnesium that contains 410 g/kg magnesium and no calcium;

"**magnesium oxide**" means the oxide of magnesium that contains 600 g/kg magnesium and no calcium;

"**manufacture**" means make, compound, mix, formulate, process, package and label for purpose of sale and "manufacturing" or "manufacturing process" have a similar meaning;

"**micro-element**" means any of the elements iron (Fe), zinc (Zn), copper (Cu), molybdenum (Mo), manganese (Mn), boron (B);

"**micro-pellet**" means particle sizes that are noticeably smaller than those of pellets;

"**municipal compost**" means the disinfected and stabilised organic fertilizer manufactured by the controlled decomposition of sorted and milled urban waste including fermentable industrial and commercial waste;

"**municipal waste**" means any municipal compost that does not meet the requirements for compost given in these regulations: on the understanding that such waste must meet the minimum requirements for municipal waste as set out in the regulations for the registration of fertilizers;

"**manufacturer**" means an individual or undertaking that manufactures or mixes fertilizers;

"**organic fertilizer**" means a fertilizer manufactured from substances of animal or plant origin, or a mixture of such substances, and that is free of any substances that can be harmful to man, animal, plant or the environment containing at least 40 g/kg prescribed plant nutrients;

"**organic fertilizer mixture**" means a mixture of registered organic fertilizers;

"pellet" means elongated cylindrical particles formed from wet cylindrically extruded material, cut to the desired length and then dried. No more than 10% remain on a 4 mm sieve and no more than 10% pass through a 1 mm sieve: provided that 90% fall within the interval of 1 mm to 4 mm and provided that the sieve size on which 10% of the particles remain contains openings that are not more than three times larger than those of the sieve on which 95% of the particles remain; and **"macro granule"** has the same meaning;

"pelleted" means the manufacture of a fertilizer in pellet form;

"physical quality assurance" means a test carried out to evaluate the fineness of a liming material and the pellet size of chemically compounded fertilizers or mixtures;

"plant nutrient" means an essential macro- or micro-element present in a fertilizer;

"powder" means particle sizes that are noticeably smaller than those for micro-pellets;

"reduced samples" means a representative part of the composite sample obtained from the latter by a process of reduction, reduced to a suitable size for final division;

"registered name" means the name approved by the Registrar under which a fertilizer is registered and may be sold: provided that in the case of an organic fertilizer such name must reflect the main component of such fertilizer;

"sampled portion" means an identified and specified quantity of a material constituting a unit and having characteristics presumed to be uniform;

"sample splitter" means an apparatus designed to split a sample into two or more equal parts;

"scoop" means a sampling instrument with which samples of fertilizers occurring in bulk can be taken;

"sealed" means to close a container in such a visible manner with a mechanism that will break visibly the first time the container is opened;

"sewage sludge" means the disinfected and stabilised organic fertilizer manufactured from the treatment of raw sewage sludge;

"shell lime" means an agricultural liming material of which the calcium and magnesium carbonate originates exclusively from sea animals;

"slags" mean a mixture of the silicates of calcium and magnesium obtained from the iron and steel industry that are capable of reducing soil acidity and that contain a minimum of 300 g/kg silicon oxide (SiO_2);

"slaked calcitic" means calcium hydroxide with a maximum of 43 g/kg magnesium and a minimum of 700 g/kg as hydroxide;

"slaked dolomitic" means the hydroxide of calcium and magnesium with a minimum of 40 g/kg magnesium and a minimum of 700 g/kg hydroxide;

"slaked magnesitic" means magnesium hydroxide with a maximum of 40 g/kg calcium and a minimum of 700 g/kg as hydroxide;

"slaked" means the hydroxides of calcium and magnesium or a mixture thereof that contains at least 800 g/kg hydroxide;

"slow release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate or urea, ammonium phosphate or potassium chloride and "controlled release fertilizer" has the same meaning;

"solution" means a homogenous liquid containing the plant nutrients in true solution;

"sterilisation installation" means an installation used for the sterilisation of substances derived from animals and destined for use as a fertilizer according to a process approved by the Registrar for this purpose;

"suspension" means a liquid in which undissolved substances may be present;

"tolerance" means the permitted deviation in the natural variation of the stated value of a fertilizer that occurs in manufacture, sampling and chemical analysis, where the deviation is expressed as a percentage of the stated value of the fertilizer;

"trademark" means a mark to which the holder of the registration has the right, either as owner or a registered user thereof, to distinguish his fertilizer from that of any other manufacturer but excludes the registered name of a fertilizer as intended in these regulations;

"total nutrients" means the total sum of the N-, P- and K-content of a fertilizer;

"unslaked calcitic" means calcium oxide with a maximum of 43 g/kg magnesium and a minimum of 700 g/kg as oxides;

"unslaked dolomitic" means the oxides of calcium and magnesium with a minimum of 43 g/kg magnesium and a minimum of 700 g/kg oxides;

"unslaked magnesitic" means magnesium oxide with a maximum of 43 g/kg calcium and a minimum of 700 g/kg as oxides; and

"unslaked" means the oxides of calcium and magnesium or mixtures thereof that contain a minimum of 800 g/kg oxides.

Registration

2. (1) An application in terms of section 3(1) of the Act for registration of a fertilizer, must be made on a form available from the Registrar for the purpose, or a clearly legible facsimile thereof on good quality A4 size paper of the same colour as the form supplied by the Registrar.

Such application must -

- (a) be made by a person residing in the Republic of South Africa or, in the case of a legal person that legal person shall have a registered office in the Republic;
- (b) signed by an approved person;
- (c) be accompanied by the prescribed application fee;
- (d) be accompanied by two copies of a typed version of the details relating to the particular fertilizer that will be marked on the container in which it will be sold, or will be attached to the label of such container;
- (e) be accompanied by guaranteed analysis from an independent ISO 17025 accredited laboratory or Agri Laboratory Association of Southern Africa (AgriLASA) affiliated laboratories for the product which was obtained in the current year of application for registration;
- (f) be accompanied by a certificate of analysis from an independent ISO 17025 accredited laboratory or AgriLASA affiliated laboratories indicating maximum levels of potentially harmful elements permitted in fertilizer products as prescribed in table 12; and in case of sludge be accompanied by a certificate of analysis for microbial contaminants as prescribe in regulation 39 (1) (d);
- (g) In the case of Group 3 fertilizers, be accompanied by experimental results conducted under controlled environmental conditions in order to determine the biological efficacy of the particular fertilizer when required; and

- (h) In the case of Group 3 fertilizers, be accompanied, when required by the Registrar, a risk assessment satisfying that the fertilizer has no adverse effect on animal health, human health or environment.

(2) In the case where an AgriLASA laboratory, certified for the relevant analysis, is used, the responsibility lies with the laboratory to proof, or present valid AgriLASA certification upon request. Such laboratories must be certified laboratory who participate in the fertilizer proficiency scheme and who had obtained at least a one star (*) (Z value < ± 2) moving average for the previous year. The Registrar must be supplied with the monthly proficiency audits by AgriLASA. The Registrar must furthermore be given access to the confidential numbers of the participating laboratories in order to access the laboratory's compliancy.

Period of registration

3. (1) Subject to the provision of sections 4 and 4A of the Act, a fertilizer registration in terms of section 3 of the Act shall be valid for three years.

Renewal of registration

4. (1) An application in terms of section 3(4)(a) of the Act for renewal of registration of a fertilizer, must be made on a form available from the Registrar for the purpose, or a clearly legible facsimile thereof on good quality A4 size paper of the same colour as the form supplied by the Registrar.

- (2) Such an application must -

- (a) depending on the case, be made by the person to whom the applicable registration certificate has been issued;
- (b) be received **no** later than the date of lapsing intended in subregulation 3 below; on the proviso that should documentary proof be submitted of the timeous despatch of the application, such application shall be deemed to have been received **on time**;
- (c) be accompanied by the prescribed fee;
- (d) be accompanied by two copies of facsimiles of all labels used in connection with the sale of the fertilizer: provided that the Registrar may, depending on the circumstances, exempt the applicant from the provisions of this regulation; and
- (e) be accompanied by a guaranteed analysis from an independent ISO 17025 accredited laboratory or AgriLASA **certified, for the relevant analyses, and**;
- (f) be accompanied by a certificate of analysis from an independent ISO 17025 accredited laboratory, or AgriLASA **certified for the relevant analyses** indicating maximum levels of potentially harmful elements permitted in fertilizer products as prescribed in table 12; and in case of sludge be accompanied by a certificate of analysis for microbial contaminants as prescribe in regulation 38 (1) (d).

- (3) Where AgriLASA laboratories are used, the provisions of regulation 2 (2) must also be complied with.

(4) Apart from the determinations of subregulation 2(b) above, an application in terms of subregulation 4(1) received by the Registrar after 31 January of a particular year will not be considered and a new application must be made for the registration of the respective fertilizer in terms of regulation 2: Provided that the Registrar may grant exemption from submission of the application form as intended in subregulation 2(1).

(5) Anyone applying for renewal of a registration in terms of this regulation must submit a sworn statement that the information he supplies with such application for the particular fertilizer, or a label used in connection therewith, does not deviate in any respect from the comparable details that have already been registered or approved with respect to that fertilizer or label. Only the original of each application can be so declared or confirmed.

Conditions for certain registrations and renewal of certain registrations

5. A registration and the renewal of a registration of a fertilizer, in terms of section 3 of the Act, is granted on condition that during the period of registration or a renewal or registration -

- (a) the composition of the particular fertilizer does not deviate by more than the allowable deviations under which it was registered;
- (b) the details approved for use on a label or container for sale of the particular fertilizer may not be altered without the prior written approval of the Registrar; and
- (c) the particular registration may not be transferred in any manner or aspect to anyone else.

Application for amendment of certain registrations and approved labels

6. (1) Should anyone in whose favour a fertilizer is registered, contemplate any alteration to its registered composition or a change to the details approved for use on a label, he should apply to the Registrar in the manner intended in regulation 2.

(2) Such application should be accompanied by the applicable documentation, the current registration certificate and application fee stated in regulation 2(1) (c): Provided that the Registrar may waive the application fee should the particular change or alteration be in the public interest.

Return of registration certificate

7. A registration certificate that is returned in terms of Section 4A (3) of the Act, should reach the Registrar within 14 days of the day on which -

- (a) the person to whom the particular registration certificate has been issued is informed in writing in terms of Section 5 of the Act of the reason for cancellation of such registration; or
- (b) the registration of the fertilizer has lapsed in terms of Section 4A (2) of the Act.

Containers of fertilizers

8. (1) A fertilizer shall be sold:

- (a) in containers which are sound; and
- (b) subject to the provisions of the Trade Metrology Act, 1973 (Act No. 77 of 1973), in containers that have been sealed or closed in a manner allowed by the nature of the fertilizer and containers shall be labelled or marked in terms of the provisions of Regulation 9 below.

(2) Notwithstanding the provisions of subregulation (1), a fertilizer may be sold in a manner other than in containers if:

- (a) it is the same in all respects with the product that is sold in containers; and
- (b) the requirements of these regulations are met.

Labelling of containers

9. (1) No person may sell any fertilizer in a container without an approved label.

(2) A container of fertilizer shall not be labelled with any marks or signs other than the prescribed details in the labelling requirements, or in terms of a provision of any law, or / and which was approved by the Registrar.

(3) The following details relating to a fertilizer must be printed on a label affixed to a container of such a fertilizer or marked on such container and such details should appear in the following order:

- (a) The registered trade mark, if applicable, and the trade name under which such fertilizer has been registered;
- (b) The registered name of such fertilizer;
- (c) The registered plant nutrient present in such fertilizer, expressed in the form and manner intended in subregulation (4);
- (d) The registration number of such fertilizer together with a reference to the Act, expressed as "Reg Nr. Act No. 36 of 1947";
- (e) The mass in the case of a solid and the volume or mass in the case of a liquid of such fertilizer at the time of packaging thereof, notwithstanding the provisions of the Trade Metrology Act, 1973 (Act No. 77 of 1973);
- (f) The batch number of the fertilizer; and
- (g) The name, address and contact details of the registration holder.

(4) The details referred to in subregulation 3 (c) above are those that, in terms of these regulations are required or approved to be indicated, and

- (a) the element symbol of the particular plant nutrient must be followed by the registered content of the plant nutrient expressed in g/kg for macronutrients and mg/kg for micronutrients, rounded off to the lower whole number;
- (b) should more than one plant nutrient require to be indicated, the details given in subregulation 4 (a) above should be given with respect to each such plant nutrient in the order required or approved;
- (c) besides the details in subregulation 3 (a) and (b), the details in regulations 26 to 47 should be given;
- (d) should the sum of the total plant nutrients be given, it should be given between brackets after the details indicated in subregulations 4 (a), (b) and (c). Such sum must be given as a percentage; and
- (e) in the case of a low chlorine mixture indicating the potassium carrier is optional.

(5) The details mentioned in subregulations (1) and (2) must be given on one label that is affixed to one side of the container of the particular fertilizer or given on one side of such container and such details shall be clearly legible symbols, letters and figures. Print size of 8 points is recommended where applicable.

(6) Instructions for use in respect of a fertilizer must appear on a label that is affixed to the container of such a fertilizer or if space on such label is limited on the back of the container or on a pamphlet placed in such container or accompanying the invoice as intended in regulation 10 provided that instructions for use are compulsory in the following cases:

- (a) if such a fertilizer has been registered to be applied by foliar application;
- (b) if such a fertilizer is also registered as an animal feed, agricultural product or animal product in terms of the Act;
- (c) if such a fertilizer is intended for use in hydroponics; and
- (d) if such a fertilizer is a home or garden fertilizer.
- (e) if in a container less than 20kg or 20 litres.

(7) The instructions for use in subregulation (6) or those that may be used optionally must be as approved by the Registrar.

(8) A container in which an imported fertilizer for sale in the Republic is packaged must, in addition to any details that the Registrar may approve, be marked or labelled with the details that a comparable fertilizer, manufactured in the Republic, would be required to have.

Supply of invoices

10. (1) Should a fertilizer with the exception of a prescription mixture be sold loose:

- (a) the invoice must contain the details required in Regulation 9;
- (b) a sample of the fertilizer, excluding agricultural lime and organic fertilizers, shall be taken provided that such sample:
 - (i) is taken by a method described in Annexure E ; and
 - (ii) it is divided into two containers of at least 250 g or 250 cm³ that are sealed and labelled in such a manner that the fertilizer can easily be identified as that described in the invoice;
- (c) one container of sample referred to in subparagraph 1 (b) (ii) must accompany the invoice and the other be retained by the seller for at least 6 months.

(2) On delivery, an invoice must be handed over to the person to whom the fertilizer is delivered or his representative: provided that such a person acknowledges receipt of same in writing.

Invoices for bulk fertilizers or custom fertilizer mixtures

11. (1) The seller of a bulk fertilizer or a custom fertilizer mixture is to ensure that the invoice or delivery docket in relation to the fertilizer is: –

- (a) handed to the purchaser or person authorized by the purchaser; or
- (b) left in a safe and conspicuous position, at the place of dealing; or
- (c) posted to the purchaser.

(2) If the invoice or delivery docket is left in accordance with subregulation (1)(b), the seller is to post a copy of the invoice or delivery docket to the purchaser within 14 days of the delivery of the fertilizer.

Advertisements

12. (1) No advertisement shall be published, screened or broadcast without prior approval of the Registrar.

(2) Advertisements shall conform to the approved registration as well as the standards of the Advertising Standards Authority of South Africa or any relevant legislation.

(3) Specific scientific claims in an envisaged advertisement must be submitted for approval by the Registrar.

(4) The advertisement shall have the following details:

- (a) An advertisement to be published in a newspaper, magazine, or other printed media:
 - (i) furnish the trade mark, if any, and the trade name of the fertilizer;
 - (ii) where it is applicable furnish the hazard statement;
 - (iii) indicate the name of plant nutrients which it contains;

- (iv) contains the registration number of such fertilizer together with a reference to the Act, expressed as "Reg Nr. Act No. 36 of 1947"; and
- (v) furnish the name and address of the registration holders.
- (b) An advertisement to be screened or broadcasted shall at least have those details referred in sub-regulation (4) (a) (i) and (iv).
- (5) Any references in an advertisement to:
 - (a) plant nutrients;
 - (b) the instructions for use, claims, application; and
 - (c) the registration, of the fertilizer in question;
 shall correspond to those details on the approved label or be based on the data filed in support of the application for registration of the fertilizer being advertised.
- (6) No person may publish or distribute a false or misleading advertisement for a fertilizer.

Practices to be followed at manufacturing plants

13. (1) The practices relating to the running of an undertaking at a plant and relating to the manufacture, control, packaging, marking or labelling of a fertilizer for the purposes of sale thereof must be such that the composition and efficacy of the particular fertilizer meet the requirements in terms of which it was registered and that it possesses all the chemical, physical and other properties so registered.

(2) Raw materials used for the manufacture of a fertilizer must be handled and stored such that:

- (a) they are protected against damage, pollution and deterioration; and
- (b) access can be reasonably gained to the different raw materials and fertilizers.

(3) Chemical and physical quality control must be carried out regularly on raw materials used for the manufacture of a fertilizer and of the fertilizer manufactured from such raw materials by the person in whose favour the fertilizer is registered or by an independent laboratory ISO 17025 accredited or AgriLASA **certified, for the relevant analyses**.

(4) The person in charge of a plant and responsible for the manufacture, control, packaging, marking or labelling of a fertilizer or liming material must have sufficient knowledge of the practices to be followed in running the manufacturing plant at such a plant and of the provisions of the Act.

(5) Raw materials either stored loose or in containers and to be used in the manufacture of the fertilizer, must be clearly identifiable.

- (6) In the event that the fertilizer is not packed or labelled immediately after manufacture, its name shall be shown on the containers in which or the place at which it is stored.

Requirements for manufacturing plants

14. (1) The premises where a fertilizer is manufactured, controlled, packed, marked, labelled or stored for the purpose of sale shall be kept orderly and clean and shall be duly registered under the Occupational Health and Safety Act, Act No. 85 of 1993.

(2) The facilities and equipment which are available at an establishment shall be suitable for the purpose for which it is to be used to ensure that the composition of the fertilizer manufactured, controlled, packed, marked, stored or labelled there complies with the particulars registered in respect thereof, and that such fertilizer possesses the chemical, physical and other properties thus registered.

(3) The area within the facility which is used to carry out a specific function in connection with the manufacture, control, packaging, labelling or warehousing of a fertilizer shall be appropriate for the proper execution of the particular function.

Records to be kept at manufacturing plants

15. (1) The person managing the plant must keep complete records in respect of each fertilizer that is manufactured, controlled, packaged or labelled including but not limited to:

- (a) the results of quality control carried out in terms of regulation 13(3) of the raw materials used in the manufacture of the fertilizer and of such fertilizer; and
- (b) complaints that have been received relating to the composition of the fertilizer or to the chemical, physical or other properties thereof.

(2) The records kept in terms of subregulation 15(1) as well as the formulation of fertilizers manufactured at the plant, must be kept at such plant or other place approved by the Registrar, for at least two years after the date on which the particular fertilizer was manufactured.

Taking of samples

16. (1) Samples for the purpose of section 15 of the Act must only be taken by the Registrar or his delegate and any authorised person in terms of the Act and such sample must be taken in accordance with Annexure E.

Analysis of samples taken

17. (1) The analysis must be done at an independent ISO 17025 accredited laboratory or AgriLASA certified laboratory, appointed by the Minister for the relevant analyses.

Imports

18. No person shall import a fertilizer into the Republic unless such fertilizer is registered, is of the composition quality and efficacy of the particular fertilizer meet the requirements in terms of which it was registered and that it possesses all the chemical, physical and other properties so registered: Provided that the Registrar may permit, in writing, for purposes of experimentation or for some purpose other than the sale of such fertilizer, the importation into the Republic of a specified quantity of a fertilizer which is not registered.

Ports of entry

19. A fertilizer must be imported only through the ports of entry referred to in Annexure C.

Appeals

Submission of appeals

20. (1) An appeal in terms of section 6 of the Act must be lodged within 60 days after the date on which the reasons on which the appeal is based have been furnished in terms of section 5 of the Act, to the Director-General: Department of Agriculture, Forestry and Fisheries.

(2) Such an appeal must:

- (a) be in the form of a written statement that has been sworn or confirmed by the commissioner of oath;
- (b) contain the reference number and date of the notification by which such a person or applicant has been informed of that decision;
- (c) indicate the grounds on which such an appeal is based;
- (d) be accompanied by the documentation relating to the subject of the appeal; and
- (e) be accompanied by the applicable fee.

(3) If such an appeal is made by someone other than the person against whom the decision has been made the specific appeal must be accompanied by a statement indicating the interest of the particular party in that decision or steps.

(4) The prescribed fee intended in sub-regulation (2)(e) should be paid by cheque, postal order or money order exchange in favour of the Director-General: Department of Agriculture, Forestry and Fisheries: provided that should the particular appeal be delivered by hand such amount may be paid in cash.

Address for submission of appeals

21. An appeal as intended in regulation 20(1) must:

- (a) When sent by post, be addressed to the Director-General: Department of Agriculture, Forestry and Fisheries; Private Bag X343, Pretoria, 0001; and
- (b) When delivered by hand, be delivered to the Director-General: Department of Agriculture, Forestry and Fisheries; Agriculture Place, 20 Beatrix Street, Pretoria.

Offences

22. Anyone who refuses or omits to comply with the provisions of the Regulations is guilty of an offence and on proof of guilt liable to a fine or imprisonment.

Payment of fees

23. (1) The postal and delivery costs of an application or article submitted in terms of these regulations must be paid by the sender.

(2) Monies payable in terms of these regulations must be paid by cheque, postal order or money order in favour of the Director-General: Department of Agriculture, Forestry and Fisheries;: Provided that if such monies are delivered by hand, they may be paid in cash.

(3) Monies paid in terms of these regulations, except in terms of Section 6 of the Act, are not refundable.

Address for submission of documents

24. An application or item or anything connected therewith that in terms of these regulations needs to be submitted to the Registrar, must:

- (a) When sent by post, be addressed to the Registrar: Act No. 36 of 1947, Private Bag X343, Pretoria, 0001; and
- (b) When sent by rail or delivered by hand, be addressed to or delivered to the Registrar: Act No. 36 of 1947, Agriculture Place, 20 Beatrix Street, Pretoria.

Repeal of regulations

25. The undermentioned regulations are hereby repealed:

- (1) Government Notice R. 799 of 20 May 1977;
- (2) Government Notice R. 1651 of 26 August 1977
- (3) Government Notice R. 472 of 14 March 1980;
- (4) Government Notice R. 473 of 14 March 1980;
- (5) Government Notice R. 1449 of 1 July 1983 in as much as it refers to fertilizers; and
- (6) Government Notice R. 250 of 23 March 2007.

PART II**REQUIREMENTS FOR FERTILIZERS*****Nitrogen fertilizers***

26. (1) A fertilizer that contains nitrogen as main plant nutrient may only be sold if designated and registered under a name in Column 2 of Table 1 and it meets the following requirements:

- (a) it is chemically composed as indicated in column 3 of Table 1;
- (b) the nitrogen content thereof meets the requirements of column 4 of Table 1;
- (c) the relevant requirements in columns 5 and 6 of Table 1; and
- (d) the information in column 6 of Table 1 is provided in terms of Regulation 9(3)(c).

Phosphorus fertilizers

27. (1) A fertilizer that contains phosphorus as main plant nutrient may only be sold if designated and registered under a name in Column 2 of Table 2 and it meets the following requirements:

- (a) it is chemically composed as indicated in column 3 of Table 2;
- (b) the phosphorus content thereof meets the requirement specified in column 4 of Table 2;
- (c) further relevant requirements specified in column 5 of Table 2; and
- (d) the information in column 6 of Table 2 is provided in terms of Regulation 9(3)(c).

(2) Besides the information in column 6 of Table 2 in terms of Regulation 9(3)(c), the following additional information must be provided in the case of:

- (a) calcium magnesium phosphate, the expression "pellet" or "powder" immediately after the name "calcium magnesium phosphate" to indicate the form in which it is sold; and
- (b) raw phosphate, the name of the place of origin as approved by the Registrar must precede the name "raw phosphate".

Potassium fertilizers

28. (1) A fertilizer that contains potassium as main plant nutrient may only be sold if designated and registered under a name in column 2 of Table 3 and it meets the following requirements:

- (a) it is chemically composed as indicated in column 3 of Table 3;
- (b) the potassium content thereof meets the requirements of column 4 of Table 3;
- (c) further relevant requirements specified in column 5 of Table 3; and
- (d) the information in column 6 of Table 3 is provided in terms of Regulation 9(3)(c).

Fertilizers that largely contain calcium, magnesium and sulphur as plant nutrients

29. (1) A fertilizer that contains mainly calcium, magnesium or sulphur as plant nutrients may only be sold if designated and registered under a name in column 2 of Table 4 and it meets the following requirements:

- (a) it is chemically composed as indicated in column 3 of Table 4;

- (b) the nutrient content thereof is specified against each name in column 4 of Table 4;
- (c) further relevant requirements specified in column 5 of Table 4; and
- (d) the information in column 6 of Table 4 is provided in terms of Regulation 9(3)(c).

Chemically compounded solid fertilizer or a fertilizer mixture that contains nitrogen, phosphorus or potassium fertilizers

30. (1) A fertilizer that is manufactured by mixing different components and that contains more than one of the plant nutrients nitrogen, phosphorus or potassium may only be sold if approved and registered under a name approved by the Registrar and it meets the following requirements:

- (a) the requirements as specified in columns 2 to 7 of Table 5;
- (b) the information in columns 8, 9 and 10 in Table 5 is provided in terms of Regulation 9(3)(c);
- (c) where applicable, the following expression must appear together with the name of the fertilizer: provided that an abbreviation may be used in place of the wording:

WORDING	ABBREVIATION
Granule	GR
Macro granule	SK/ SG
Micro guaranteed analysis granule	MK/ MG
Powder	P
Crystal	C
Suspension	SP
Nitro-phosphate suspension	NSP
Solution	OPL/SOL
Chloride	Cl Laag/ Cl Low
Water soluble	WO/ WS
Clear solution	HO / CS

- (d) where applicable the fertilizer must meet the requirements of the Explosives Act of 2003 (Act No. 15 of 2003) and the regulations issued in terms thereof; and
- (e) the constituents thereof must not segregate visibly after manufacture.

(2) A mixed fertilizer shall only be registered and sold as a low Chloride fertilizer where, in the case of fertilizer mixture, the sum of the total plant nutrients is:

- (a) less than 200 g/kg and the Chloride may not be more than 20 g/kg;
- (b) between 200 g/kg and 290 g/kg and the Chloride content may not be more than 25 g/kg;
- (c) between 290 g/kg and 390 g/kg and the Chloride content may not be more than 30 g/kg; and
- (d) higher than 390 g/kg and the Chloride content may not be more than 35 g/kg.

Liquid/ fluid fertilizers

31. (1) A fertilizer manufactured in a liquid/ fluid form that contains more than one of the nutrients nitrogen, phosphorus and potassium may only be sold if approved and registered under a name approved by the Registrar and it meets the following requirements:

- (a) the requirements of columns 2 to 7 of Table 6;

- (b) the information in columns 8, 9 and 10 is provided in terms of Regulation 9(3)(c);
- (c) where applicable, the expressions given in Regulation 31(1)(d) are given together with the name of the fertilizer; and
- (d) the nutrient content is given on a mass: mass basis. It may also be given on a mass: volume basis with specific gravity at 20°C.

Micro-element fertilizers

32. (1) Micro-elements as described in Table 7 may only be sold if registered under a name in column 2 of Table 7 and it meets the following requirements:

- (a) the minimum plant nutrient concentration is as specified against each name in column 3 of Table 7;
- (b) other requirements specified in column 3 of Table 7; and
- (c) the information in column 4 is provided in terms of Regulation 9(3)(c): provided that in the case of organic complexing agents the abbreviation given in Table 15 may be used.

Micro-element mixtures

33. (1) A fertilizer consisting of a mixture of micro-elements may only be sold if registered and it meets the following requirements:

- (a) the minimum content of each element in column 1 of Table 8 is that specified in columns 2, 3 and 4 of Table 8;
- (b) the minimum total micro-element content:
 - (i) is 50 g per kg for powders/granules;
 - (ii) is 20 g per kg for liquid mixtures.

(2) The total elements and water soluble content of each element must be provided in terms of Regulation 9(3)(c) as well as instructions for use as approved by the Registrar.

Addition of macro- and micro-elements

34. (1) Macro- and micro-elements may be added to chemically composed, mixed or liquid fertilizers provided that:

- (a) such macro- and micro-elements are registered in terms of the Regulations;
 - (b) such additions must be approved by the Registrar; and
 - (c) the added macro- and micro-elements must be indicated in terms of Regulation 9(3)(c).
- (2) If micro-nutrients are added to inorganic fertilizers they must:
- (a) be registered in terms of the regulations;
 - (b) be supported by written proof that justifies such addition;
 - (c) not be added in lesser amounts than in Table 9;
 - (d) be printed on the label and invoice in terms of Regulation 9(3)(c); and
 - (e) be accompanied by instructions for approval by the Registrar on the label.

Compost

35. (1) A compost as defined in Regulation 1 may only be sold if registered and it meets the following requirements:

- (a) it is sold in containers and must be fine enough for one hundred per cent thereof to pass through a 12 mm standard sieve;
- (b) it is a household and garden fertilizer as intended in Regulation 1.
- (c) the ash content thereof does not exceed 670 g/kg on a dry matter basis;
- (d) the moisture content does not exceed 400 g/kg;
- (e) it does not contain any visibly undecomposed organic or other foreign material; and
- (f) at least 80% of seeds that are planted under controlled conditions germinate normally and exhibit normal growth when planted in a growth medium as prescribed by the holder of the registration or manufacturer of such fertilizer.

Municipal compost

36. (1) A municipal compost that consists of urban waste may only be sold if registered and it meets the following requirements:

- (a) it meets the requirements set out in Regulation 35 (1) (a) to (f); and
- (b) no macro- or micro-element is added to a municipal compost without the written approval of the Registrar.

Sewage sludge

37. (1) A sewage sludge may only be sold if registered and it meets the following requirements:

- (a) Guidelines for the utilisation and disposal of wastewater sludge: volume 2, requirements for the agricultural use sludge of the Department of Water Affairs'
- (b) the requirements for total inorganic content as given in Table 12;.
- (c) the requirements of Regulation 35 (1) (a) to (f); and
- (d) it must be certified to comply with the following quality requirements:
 - (i) Stabilised – should not cause odour nuisances or fly-breeding
 - (ii) Contains no viable *Ascaris* ova per 10 g dry sludge
 - (iii) Maximum 0 *Salmonella* organisms per 10 g dry sludge
 - (iv) Maximum 1000 *Faecal coliform* per 10 g dry sludge immediately after treatment (disinfection / sterilisation)

(2) No macro- or micro-elements may be added to the sewage sludge without the written approval of the Registrar.

Mixture of municipal compost and sewage sludge

38. (1) A compost that consists of a mixture of municipal compost and sewage sludge may only be sold if registered and it meets the following requirements:

- (a) the Department of Water & Environmental Affairs' requirements for sewage sludge;

- (b) the requirements for total inorganic content as given in Table 12;.
- (c) the requirements of Regulation 35 (1) (a) to (f); and
- (d) it must be certified to comply with the following quality requirements;
 - (i) Stabilised- should not cause odour nuisances of fly-breeding;
 - (ii) Contains no viable *Ascaris* ova per 10g dry sludge;
 - (iii) Maximum 0 *salmonella* organisms per 10g dry sludge; and
 - (iv) Maximum 1000 *Faecal coliform* per 10g dry sludge immediately after treatment (disinfection/strilisation)

(2) No macro- or micro-elements may be added to a mixture of municipal compost and sewage sludge without the written approval of the Registrar.

Composted poultry manure, kraal manure and other manures

39. (1) An organic fertilizer that consists of composted poultry manure, kraal manure or any other excretions of animals, with the exception of bat manure and guano, may only be sold if registered and it meets the requirements of Regulation 35 (1) (a) to (f); on condition that:

- (a) the ash content does not exceed 670 g/kg on a dry matter basis; and
- (b) no macro- or micro-elements may be added without the written approval of the Registrar.

Bat manure

40. (1) An organic fertilizer that consists of bat manure may only be sold if registered and it meets the following requirements:

- (a) the minimum total nitrogen content is 20 g/kg;
- (b) the minimum phosphorus content soluble in 2% citric acid is 18 g/kg;
- (c) the total content of nitrogen and phosphorus is a minimum of 60 g/kg; and
- (d) it is sterilised by any method approved in writing by the Registrar that eliminates organisms that could be harmful to man, animal or the environment.

(2) No macro- or micro-elements may be added without the written approval of the Registrar.

Guano, carcass, hoof, horn and bone meal

41. (1) A product specified in column 1 of Table 13 may only be sold if registered and it meets the following requirements:

- (a) the total nitrogen content is as specified in column 2 of Table 13;
- (b) the sum total of the nitrogen content, phosphorus content and potassium content is as given in column 3 of Table 13; and
- (c) it furthermore meets the requirements given in column 4 of Table 13.

(2) The details specified in column 5 of Table 13 must be provided in terms of Regulation 9(4)(a).in respect of the fertilizers.

(3) The fertilizers mentioned in Regulation 43 with the exception of guano must furthermore meet the requirement in sub-regulation (1) (c) above.

(4) No macro- or micro-elements may be added to a fertilizer without the written approval of the Registrar.

Organic or enriched organic fertilizer mixtures

42. (1) An enriched organic fertilizer mixture as defined in Regulation 1, may only be sold if registered under a name approved by the Registrar, and it meets the following requirements:

- (a) the nitrogen content is as specified in column 4 of Table 14; and
- (b) the sum of the nitrogen, total phosphorus and potassium content is as specified in column 3 of Table 14.

(2) An organic fertilizer mixture as described in Regulation 1 may only be sold if approved and registered and it meets the following requirements:

- (a) the sum of the nitrogen, total phosphorus and potassium content is as specified in column 3 of Table 14; and
- (b) other requirements of Table 14.

Micro-elements in organic fertilizers and enriched organic fertilizer mixtures

43. (1) Where micro-elements are added to an organic fertilizer mixture or enriched organic fertilizer mixture:

- (a) such micro-element must be registered in terms of the Act;
- (b) written proof must be supplied that justifies such addition;
- (c) it must not be in lesser amounts than stipulated in Table 9;
- (d) it must be indicated on the label or invoice in terms of Regulation 9(3)(c); and
- (e) instruction for use approved by the Registrar must be printed on the label or invoice if it is a home or garden fertilizer.

(2) If the natural micro-element content of an organic fertilizer or an enriched organic fertilizer mixture is printed on the label as intended in Regulation 9(3)(c):

- (a) it must not be for amounts lower than specified in Table 9; and
- (b) the micro-element content must meet the solubility criteria specified in Table 7.

Liming materials

44. (1) A liming material may only be sold if registered as a fertilizer and it meets the following requirements:

- (a) the requirements set out in Table 15.
- (b) the fineness thereof with the exception of shell lime is as follows:
 - (i) that at least 50% thereof passes through a 250 micron sieve (0,25 mm); and
 - (ii) that at least 100% thereof passes through a 1700 micron sieve (1,7 mm); provided that a finer grade may be registered.
- (c) the fineness of shell lime is as follows:
 - (i) that at least 60% thereof passes through a 500 micron sieve (0,5 mm); and

- (ii) that at least 100% thereof passes through a 1700 micron sieve (1,7 mm); provided that a finer grade may be registered.
- (d) The maximum moisture content thereof on an oven dry basis at 105°C is 150 g/kg and the maximum moisture content of a liming material referred to in subparagraph (2) does not exceed 200 g/kg.
- (2) A liming material may be registered as microfine if at least 95% thereof passes through a 250 micron sieve and at least 80% thereof passes through a 106 micron sieve.
- (3) The details in columns 1 to 8 of Table 15 must be given in terms of Regulation 9 in respect of the liming materials, as well as the following information:
 - (a) CCE values, according to the strong acid and Relative Resin Suspension methods;
 - (b) Moisture content; and
 - (c) Sieve test.

Custom mixes

45. (1) A person managing the undertaking where custom mixes are manufactured for specific clients, shall, in respect of each batch or series of the different custom mixes, manufactured, controlled, packed, marked or labelled thereof, keep comprehensive records of:—

- (a) the results of quality checks made on the registered raw materials used as ingredients in the manufacture of the custom mix comprising of each such custom mix;
- (b) each date on which a quantity of the custom mix was sold, the names and addresses of the purchaser to whom each such quantity was sold, and the quantity thereof which was sold to each such person;
- (c) the name and address of the person on whose behalf the custom mix was prepared;
- (c) the composition/nutrients, as well as the purpose for which it is needed;
- (d) registration details of all raw materials;
- (e) registration details of all the sources of the raw materials
- (f) consent letter (s) from the supplier of the all the raw materials
- (e) the quantity mixed; and
- (f) the signature of and date on which the qualified person on whose behalf the custom mix was prepared, submitted a request.

(2) Where the custom mixes are not sold in containers, the label or invoice shall contain the following information:

- (a) name and address of the person who placed the order;
- (b) the words "not for public sale";
- (g) the name of the product or for which purpose the product is intended;
- (h) the plant nutrients present in such fertilizer
- (e) the mass of the product; and

(f) the name and address of the manufacturer.

(3) A person manufacturing a custom mix shall keep a reference sample for at least six months after the date of the delivery.

(4) If for any reason a custom mix must be stored it must be clearly labelled (clearly legible) with the following information:-

- (a) Name of client;
- (b) Order or invoice number;
- (c) Date of manufacture;
- (d) Product name and /or composition;
- (e) Mass or volume produced.

Permissible deviations in components / nutrients / micro-element contents

46. (1) Notwithstanding anything to the contrary contained in these regulations, a fertilizer shall not be deemed to deviate in its registered components/ nutrients or micro-elements contents as long as it:

- (a) is within the limits set out in Table 16 and does not deviate more than 1.4% in absolute terms of its registered value for the total nutrients (fertilizer mixture);
- (b) is within the limits set out in Table 17 (chemically compounded fertilizer);
- (c) is within the limits set out in Table 18 (fertilizer mixture or chemically compounded fertilizer with micro elements); and
- (d) does not deviate by more than 7% on a dry mass basis (liming material).

Harmful elements

47. (1) **All fertilizers** must meet the requirements as specified in Table 12. The levels of harmful elements may not exceed the limit indicted in Table 12.

(2) Each application must be accompanied by a certificate of analysis on the harmful elements contained in such fertilizer.

(3) The Registrar may request the applicant to conduct further analysis of harmful elements at any time after the registration of any such fertilizers.

ANNEXURE A



agriculture, forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Republic of South Africa
Registrar: Act 36/1947
Private Bag X343
0001 Pretoria

FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT No. 36 OF 1947), AS AMENDED

APPLICATION FOR THE REGISTRATION OF A FERTILIZER

INFORMATION FOR APPLICANTS

1. The application form must be duly completed in all respects. Where applicable, the requested information can be submitted as separate numbered attachments.
2. The application and draft label must be submitted in duplicate with an explanatory covering letter.
3. The application must be submitted to the Registrar: Act 36 of 1947, Private Bag X343, Pretoria, 0001.
4. Every application must be accompanied by the prescribed registration fee.
5. For further information visit our website at www.daff.gov.za

Indicate as appropriate:

New Registration:				
Registration transfer:				
Amendments to an existing registration:				
Other: -				
Will product be marketed/distributed under own label:	YES:		NO:	
If the answer is no to the above, please indicate the name of the marketer/ distributor:				

1. APPLICANT		
Identification:	Details of applicant	Details of distributor/agent in country: (List of additional distributors/agents can be attached).
Company name and company registration number:		
Physical address:		
Postal address: (and postal code)		
Telephone: (and area code)		
Fax: (and area code)		
E-mail:		

2. INDICATE THE FOLLOWING						
Is the applicant the	Importer					
	Manufacturer					
	Blender					
	Seller					
3. DETAILS OF THE MANUFACTURE						
3.1. Name of manufacturer (s) if more than one, provide an Annexure						
3.2. Postal address						
3.3. Physical address (street address)						
3.4. Telephone Number:						
3.5. Fax Number						
3.6. E-mail address						
3.7. Establishment and sterilizing plant (where applicable).						
Registration number (where applicable)						
3.8. Initials and Surname(s) of person(s) responsible for formulation						
3.9. Qualifications						
4. PARTICULARS OF PRODUCT						
4.1. Trade mark (acknowledged or registered in terms of Trade Marks Act (Act 62 of 1963) (if any)						
4.2. Trade name:						
4.3. Fertilizer group	Group 1		Group 2		Group 3	
4.4. How will the product be sold	Bulk			Containers		
4.5. Type and size of container	Polyprop bag	Plastic bag	Drum	Glass bottle	Plastic bottle	Other

ANNEXURE B

TABLE 1
NITROGEN FERTILIZERS

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
1	Ammonium sulphate	Chemically derived product that contains ammonium sulphate as essential component	200 g/kg N Nitrogen present as ammonium nitrogen	1. Total N 2. Ammonium - N 3. Nitrate - N 4. Amine - N 5. Cyanamide - N 6. Ureaformaldehyde 6a. Luke warm water-soluble N 6b. Hot water-soluble- N 7. Total calcium 8. Total magnesium	Solubility (1); Solubility (2) optional; Sulphur optional, as long as at least 10 g/kg
2	Sodium nitrate	Chemically derived product that contains sodium nitrate as essential component	150 g/kg N Nitrogen present as nitrate nitrogen		Solubility (1); Solubility (3) optional
3	Calcium nitrate	Chemically derived product that contains calcium nitrate as essential component and possibly ammonium nitrate	119 g/kg N (solid) 170 g/kg Ca (solid) 80 g/kg N (liquid) 110 g/kg Ca (liquid)		Solubility (1) and (7); Solubility (3) optional
4	Calcium cyanamide	Chemically derived product that contains calcium cyanamide as essential component, calcium oxide and possibly small amounts of ammonium salts and urea	180 g/kg N (dry or liquid) Nitrogen present as total nitrogen and at least 75% to be declared bound in the form of cyanamide		Solubility (1); Solubility (5) optional
5	Urea	Chemically derived product that contains carbonyl diamide (carbamide) as essential component	450 g/kg N (solid) Total amine nitrogen (biuret included)	Same as for ammonium sulphate 1 - 8	Solubility (1)
6	Low biurette urea	Chemically derived product that contains carbonyl diamide (carbamide) as essential component	450 g/kg N (solid) Total amine nitrogen (biuret included) Biuret content lower than 0,5%		Solubility (1)

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
7	Limestone ammonium nitrate	Intimately mixed product of powdered lime and ammonium nitrate granules or prill.	270 g/kg N The minimum content of calcitic or dolomitic lime shall be 150 g/kg with a purity level of at least 900 g/kg. Must meet the requirements of the Explosives Act, Act 26 of 1956 and the regulations thereof.		Solubility (1); Solubility (2) and (3) optional; Sulphur content optional, provided at least 10 g/kg
8	Ammonium sulphate nitrate	Mixture of ammonium nitrate and ammonium sulphate	250 g/kg N (solid) 180 g/kg N (liquid) 50 g/kg nitrate-N (solid) 40 g/kg nitrate-N (liquid) Must meet the requirements of the Explosives Act, Act 26 of 1956 and the regulations thereof.		Solubility (1); Solubility (2) and (3) optional; Sulphur content optional provided at least 10 g/kg
9	Aqua ammonia	Mixed product of water and ammonia	150 g/kg N	Same as for ammonium sulphate 1 - 8	Solubility (1)
10	Urea formaldehyde	Reaction production of urea and formaldehyde	320 g/kg N 10 - 13% soluble in luke warm water (25°C) 15 - 16,5% insoluble in luke warm water (25°C) but soluble in hot water 8,5 - 13% insoluble in boiling water		Solubility (1) 6(a) and 6(b)
11	Ammonium chloride	Chemically derived product that contains ammonium chloride as essential component	240 g/kg N		Solubility (1); Solubility (2) optional
12	Ammonium nitrate solution	Aqueous solution of ammonium nitrate	100 g/kg N Must meet the requirements of the Explosives Act, Act 26 of 1956 and the regulations thereof.		Solubility (1) Solubility (2) and (3) optional
13	Calcium ammonium nitrate	Mixed product of ammonium and calcium nitrate	100 g/kg N (solid) 80 g/kg N (liquid) Must meet the requirements of the Explosives Act, Act 26 of 1956 and the regulations thereof.	Same as for ammonium sulphate 1 - 8	Solubility (1) and (7); Solubility (2) and (3) optional

NAME OF PRODUCT		METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
14	Urea ammonium nitrate (UAN) solution	Aqueous solution that contains ammonium nitrate and urea as essential components	210 g/kg N Must meet the requirements of the Explosives Act, Act 26 of 1956 and the regulations thereof.		Solubility (1); Solubility (2), (3) and (4) optional
15	Magnesium nitrate	Chemically derived product with magnesium nitrate as essential component	100 g/kg N (solid) 80 g/kg Mg (solid) 60 g/kg N (liquid) 50 g/kg Mg (liquid)		Solubility (1) and (8); Solubility (3) optional
16	Magnesium ammonium nitrate	Chemically derived product with ammonium nitrate and magnesium containing salts (dolomite, magnesium carbonate and/or magnesium sulphate as essential components)	190 g/kg N 60 g/kg NO ₃ - N 60 g/kg NH ₄ + N 30 g/kg Mg	1. Total N 2. Ammonium-N 3. Nitrate-N 4. Amine-N 5. Cyanamide-N 6. Urea formaldehyde 6a. Luke warm water-soluble-N	Solubility (1); Solubility (2), (3) and (8) optional
17	Anhydrous ammonia	Chemically derived product with NH ₃ as essential component	800 g/kg N	6b. Hot water-soluble-N 7. Total calcium 8. Total magnesium	Solubility (1)
18	Urea formaldehyde reaction products: MU – methyleneurea MDU - Methylenediurea DMTU – dimethylene-triurea	Reaction of: Urea and formaldehyde Urea and monomethylolurea Methylenediurea and monomethylolurea	38% N min, AI < 40 Of the N present: 10 - 13% is cold water-soluble nitrogen (CWSN) - soluble in 25°C, the N is mineralised in about 1 - 4 weeks, 15 - 17% is cold water insoluble nitrogen (VWIN) or hot water-soluble nitrogen (HWSN) at 25°C, the N is mineralised in about 1 - 16 weeks, 7 - 13% is hot water insoluble nitrogen (HWIN) at 98 - 100°C, the N is mineralised in about 1 - 30 weeks		

1	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
2					
19	Urea formaldehyde condensates: CDU - Crotonylidendiurea IBDU - isobutylidenediurea	Urea and crotonaldehyde Urea and isobutyraldehyde	32% N, AI = 99.8 30-31% N, AI = 99		
20	Soluble N sources that gradually decompose: GUAN - guanylurea GUP - guanylurea phosphate GUS - guanylurea sulphate	Acidulation of Calcium Cyanamide	27,8% N 37% N		
21	Sparingly soluble minerals: Magnesium ammonium phosphate		57 - 90 g/kg N 126 - 196 g/kg P	Solubility approx. 0.014 g/100 ml at 25°C 1 - 2% water-soluble nitrogen	

Products 1 - 7, 9 - 12, 15 - 17, 18 - 21 are chemically derived products.
Products 8, 13 and 14 are mixtures.

TABLE 2
PHOSPHORUS FERTILIZERS

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
1	Basic slag	Product derived from iron foundry through treatment of phosphorus melt. Contains calcium silica phosphate as essential component	40 g/kg P, soluble in 2% citric acid. Particle size: At least 75% capable of passing through a sieve with a mesh of 150 micron; at least 98% capable of passing through a sieve with a mesh of 630 micron.	1. Water-soluble P 2. P soluble in mineral acid (HNO ₃ + HC1) 3. P soluble in 2% citric acid 4. Total calcium 5. Total sulphur	Solubility (3); Solubility (2) optional
2	Superphosphate	Product derived from the reaction of milled mineral phosphate with sulphuric acid and contains mono calcium phosphate as an essential component together with calcium sulphate	80 g/kg P, soluble in 2% citric acid, of which at least 80% must be water-soluble.		Solubility (3); Solubility (1), (4) and (5) Optional provided the calcium and sulphur contents are at least 10 g/kg
3	Partially dissolved milled sedimentary rock phosphate	Product derived from the partial dissolution of milled sedimentary rock with sulphuric acid, phosphoric acid or nitric acid and contains mono and tri calcium phosphates and calcium sulphate as essential components	80 g/kg P, soluble in mineral acids, of which at least 25% must be water-soluble. Particle size of phosphate rock: • At least 85% capable of passing through a sieve with a mesh of 150 micron; • At least 98% capable of passing through a sieve with a mesh of 630 micron.		Solubility (1) and (2) Solubility (3), (4) and (5) optional provided the calcium and sulphur contents are at least 10 g/kg
4	Dicalcium phosphate	Product derived from the precipitation of soluble phosphoric acid with mineral phosphates or bones and contains dicalcium phosphate hydrate as essential component.	160 g/kg P, soluble in 2% citric acid. Particle size: At least 80% capable of passing through a sieve with a mesh of 150 micron.		Solubility (3); Solubility (2) and (4) optional provided the calcium content is at least 10 g/kg

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
5	Super and sedimentary milled phosphate rock	Shall consist of a mixture of superphosphate powder and sedimentary milled phosphate rock	110 g/kg P, soluble in mineral acids, of which at least 25% must be water-soluble. Sedimentary milled phosphate rock: Particle size: - At least 80% capable of passing through a sieve with a mesh of 150 micron. - At least 99% capable of passing through a sieve with a mesh of 300 micron.		Solubility (1), (2) and (3); Solubility (4) and (5) optional, provided the calcium and sulphur content are at least 10 g/kg
6	Phosphoric acid solution	Chemically derived product that contains phosphoric acid as essential component	100 g/kg P soluble in mineral acids		Solubility (2)
7	Sedimentary milled phosphate rock powder	Product derived from milling sedimentary phosphate rock and contains carbonate as essential component	80 g/kg P soluble in mineral acids, of which at least 20% must be soluble in 2% citric acid and at least 70% must be soluble in four successive extractions with 2% citric acid. Particle size: - At least 80% capable of passing through a sieve with a mesh of 150 micron. - At least 98% capable of passing through a sieve with a mesh of 630 micron.		Solubility (2); Solubility (3) and (4) optional provided the calcium content is at least 10 g/kg. Declaration of P-component. A phosphate rock of this fineness shall be designated with the word "powder" or the letter "P".

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
8	Phosphate rock-sedimentary phosphate rock (micro granules)	Product derived through milling sedimentary phosphate rock and contains carbonate appetite as essential component.	80 g/kg P soluble in mineral acids of which at least 20% must be soluble in 2% citric acid and at least 70% must be soluble in four successive extractions with 2% citric acid. Particle size: - At least 20% capable of passing through a sieve with a mesh of 150 micron. - At least 98% capable of passing through a sieve with a mesh of 630 micron.		Solubility (2) Solubility (3) and (4) optional, provided the calcium content is at least 10 g/kg Declaration of P-component. (ex. Sedimentary milled phosphate rock). A phosphate rock of this fineness shall be designated with the word "micro granules" or the letters "µG" (µK)
9	Fused phosphate	Melted fusion of natural phosphate and magnesium hydro-silicate rock	At least 100 g/kg P soluble in strong acid of which at least 97,4% is soluble in 2% citric acid 60 g/kg Mg soluble in 2% citric acid; 100 g/kg Si soluble in 2% citric acid	1. P soluble in 3% citric acid. 2. Mg soluble in 2% citric acid. 3. Ca soluble in 2% citric acid. 4. Si soluble in 2% citric acid.	Regulation 5(2)
10	Diammonium phosphate	Ammonium phosphates produced by reacting ammonia with phosphoric acid	160 g/kg N 200 g/kg P		
11	Mono ammonium phosphate	Ammonium phosphates produced by reacting ammonia with phosphoric acid	100g/kg N 200g/kg P		
12	Mono potassium phosphate		220 g/kg P 286 g/kg K		

TABLE 3
POTASSIUM FERTILIZERS

	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
1	Potassium chloride	Product derived from raw potassium salts, and contains potassium chloride as essential component.	480 g/kg K (solid) 100 g/kg K (liquid)	1. Water-soluble potassium 2. Water-soluble magnesium 3. Total sulphur 4. Hot water-soluble magnesium 5. Total calcium 6. Total nitrogen 7. Water-soluble nitrogen 8. Hot water-soluble potassium	Solubility (1)
2	Potassium chloride that contains magnesium salts	Product derived from raw potassium salts with added magnesium salts and contains potassium chloride and magnesium salts as essential components.	150 g/kg K (solid) 30 g/kg Mg (liquid) Magnesium is present as water-soluble salts.		Solubility (1) and (2); Solubility (3) optional, provided the sulphur contents is at least 10 g/kg
3	Potassium sulphate	Production chemically derived from potassium salts and contains potassium sulphate as essential component.	390 g/kg K (solid) 30 g/kg K (liquid) Maximum chlorine content: 30 g/kg Cl		Solubility (1); Solubility (3) optional, provided it contains at least 10 g/kg sulphur. Declaration of "low chlorine" must meet requirements of regulation 5(2).
4	Potassium magnesium sulphate which occur chemically	Product chemically derived from potassium salts, possibly with addition of magnesium salts and contains potassium sulphate and magnesium sulphate as essential components.	180 g/kg K (solid) 40 g/kg Mg (liquid) Magnesium in the form of water-soluble salts, present as magnesium. Maximum chloride content: 30 g/kg Cl	Same as for Potassium chloride 1 - 8	Solubility (1) and (2); Solubility (3) optional, provided it contains at least 10 g/kg sulphur. Declaration of "low chlorine" must meet requirements of regulation 5(2).
5	Potassium nitrate	Product chemically derived from potassium salts and contains potassium nitrate as essential components.	300 g/kg K 100 g/kg N		Solubility (1) and (6)

1	NAME OF PRODUCT	3 METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	4 MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	5 FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	6 DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2			5	6
6	Sulphomag	Natural mineral that contains sulphur, magnesium and potassium	170 g/kg K		Solubility (4) and (8) Solubility (3) optional, provided it contains at least 10 g/kg sulphur
7	Potassium magnesium sulphate which occur naturally	A double salt of magnesium sulphate and potassium sulphate with a small amount of sodium chloride.	180 g/kg K 48 g/kg Mg 220 g/kg S 30 g/kg Cl max.		
*	Cold water-soluble potassium unless specified otherwise.				
*	Products 1 - 6 listed are chemically derived products.				

TABLE 4
FERTILIZERS THAT CONTAIN MAINLY CALCIUM, MAGNESIUM OR SULPHUR

NAME OF PRODUCT		METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
1	2	3	4	5	6
1	Calcium sulphate	Product of natural or industrial origin and contains calcium sulphate at different degrees of hydration	180 g/kg Ca 120 g/kg S Milling Fineness: - At least 90% to pass through a 2000 micron sieve. - At least 50% to pass through a 250 micron sieve.	1. Total sulphur 2. Total calcium 3. Water-soluble magnesium	Solubility (1) and (2) optional
2	Elemental sulphur	Reasonably fine natural or industrial product, in powder or granule form with or without filler material	900 g/kg S		Solubility (1)
3	Magnesium sulphate	Product that contains magnesium sulphate heptahydrate as essential component	90 g/kg Mg 120 g/kg S		Solubility (3); Solubility (1) optional
4	Calcium chloride		183 g/kg Ca		Solubility (2)
5	Calcium EDTA	Water-soluble product obtained by combining calcium chemically with a chelating agent	100 g/kg Ca		Solubility (2)
6	Magnesium sulphate anhydrous		200 g/kg Mg 260 g/kg S		Solubility (1) and (3)
7	Magnesium sulphate monohydrate - kieserite	Product of mineral origin containing monohydrated magnesium sulphate as the main component	175 g/kg Mg 230 g/kg S		Solubility (1) and (3)
8	Magnesium sulphate heptahydrate	Product containing heptahydrated magnesium sulphate as the main component	99 g/kg Mg 130 g/kg S		Solubility (1) and (3)

1	NAME OF PRODUCT	METHOD OF MANUFACTURING & ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT, FORM, OTHER REQUIREMENTS	FORMS AND SOLUBILITIES TO BE DECLARED IN COLUMN 6	DECLARATION OF SOLUBILITIES AND OTHER NORMS
2		3	4	5	6
9	Magnesium EDTA	Water-soluble product obtained by combining magnesium chemically with a chelating agent	60 g/kg Mg		Solubility (3)



TABLE 5
SOLID FERTILIZER MIXTURES CONTAINING TWO OR MORE MAIN PLANT NUTRIENTS

	METHOD OF MANUFACTURE AND ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT	MINIMUM PLANT NUTRIENT PER ELEMENT	FORMS, SOLUBILITIES AND ELEMENTAL PLANT NUTRIENT CONTENT TO BE DECLARED AS SPECIFIED IN COLUMNS 8, 9 AND 10			DECLARATION OF FORMS, SOLUBILITIES AND OTHER NORMS		
				N	P	K	N	P	K
1	2	TOTAL	4	5	6	7	8	9	10
NPK-, NP-, NK- or PK-fertilizers	Product chemically derived or through mixing without the addition of organic plant nutrients of animal or plant origin	100 g/kg N + P + K 80 g/kg N + P 80 g/kg N + K 80 g/kg P + K	10 g/kg	1. Total N 2. Nitrate-N 3. Ammonium-N 4. Amine-N 5. Cyanamide-N 6. Urea formaldehyde	1. Water-soluble P 2. P soluble in mineral acids 3. P soluble in 2% citric acid	Total K	Total N If any of the N forms (2) to (6) are present at, at least 1% may be declared.	1) An NPK-, or PK-fertilizer free of basic slag, calcium magnesium silico phosphate, partially solubilised phosphate rock or sedimentary milled phosphate rock must be declared in terms of solubility (3); 2) An NPK-, NP- or PK-fertilizer that: (a) contains basic slag or calcium magnesium silico phosphate, must be declared in terms of solubilities (1), (2) and (3); (b) sedimentary milled phosphate rock or partially solubilised sedimentary phosphate rock, must be declared in terms of solubility (2) and	1) Total K 2) Declaration of "low chlorine" must meet the requirements of guideline 5(g) 3) Chlorine content may be declared

	METHOD OF MANUFACTURE AND ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT	MINIMUM PLANT NUTRIENT PER ELEMENT	FORMS, SOLUBILITIES AND ELEMENTAL PLANT NUTRIENT CONTENT TO BE DECLARED AS SPECIFIED IN COLUMNS 8, 9 AND 10				DECLARATION OF FORMS, SOLUBILITIES AND OTHER NORMS		
				N	P	K		N	P	K
1	2	TOTAL 3	4	5	6	7		8	9	10
									(3). The present of these phosphate sources must	
									be declared and, in the case of sedimentary milled phosphate rock, its fineness and contribution to total P must be declared.	
								Calcium, magnesium and sulphur may be declared, provided the content thereof is at least 10,5 and 10 g/kg respectively.		
	Product chemically derived or through mixing, with addition of organic plant nutrients of animal or plant origin. Organic component is less than 500 g/kg (m/m)	100 g/kg N + P + K						1) Total N	2) P soluble in mineral acids. 3) P soluble in 2% citric acid. If raw phosphate is a component of the mixture of application for registration must indicate the fineness and origin of the source.	
								The declaration of the type/origin of the organic component, as well as the content thereof in the mixture, is compulsory.		

TABLE 6
LIQUID FERTILIZER MIXTURES CONTAINING 2 OR MORE MAIN PLANT NUTRIENTS

METHOD OF MANUFACTURE AND ESSENTIAL COMPONENTS		MINIMUM PLANT NUTRIENT CONTENT	MINIMUM PLANT NUTRIENT PER ELEMENT	FORMS, SOLUBILITIES AND ELEMENTAL PLANT NUTRIENT CONTENT TO BE DECLARED AS SPECIFIED IN COLUMNS 8, 9 AND 10			DECLARATION OF FORMS, SOLUBILITIES AND OTHER NORMS		
		TOTAL		N	P	K	N	P	K
1	2	3	4	5	6	7	8	9	10
NPK-, NP-, NK- or PK-fertilizer solutions	Product in liquid form in which the plant nutrients are in solution, without the addition of organic plant nutrients of animal or plant origin.	100 g/kg N + P + K 80 g/kg N + P 80 g/kg N + K 80 g/kg P + K	10 g/kg per element	1. Total N 2. Nitrate-N 3. Ammonium-N 4. Urea-N	Water-soluble P	Water-soluble K	1) Total N 2) If any of the N forms (2) to (4) are present at least 1% they may be declared.	Water-soluble P	1) Water-soluble K 2) Declaration of "low chlorine" must meet the requirements of regulation 5(2). 3) The chlorine content may be declared.
							Declaration of typical density at 20°C. Calcium, Magnesium and Sulphur may be declared, provided the content thereof is at least 10,5 and 10 g/kg respectively.		
NPK-, NP-, NK- or PK-fertilizer suspension	Production in liquid form in which the plant nutrients are derived from substances both in suspension in the water, and in solutions without the addition of organic plant nutrients of animal or plant	100 g/kg N + P + K 80 g/kg N + P 80 g/kg N + K 80 g/kg P + K	10 g/kg per element	1. Total N 2. Nitrate-N 3. Ammonium-N 4. Urea-N	1. Water-soluble P 2. P soluble in 2% citric acid	Total K	1) Total N 2) If any of the N forms (2) to (4) are present at least 1% by mass, may be declared.	P content must be declared in terms of solubility (2); solubility (1) optional	1) Total K 2) Declaration of "low chlorine" must meet the requirements of

	METHOD OF MANUFACTURE AND ESSENTIAL COMPONENTS	MINIMUM PLANT NUTRIENT CONTENT	MINIMUM PLANT NUTRIENT PER ELEMENT	FORMS, SOLUBILITIES AND ELEMENTAL PLANT NUTRIENT CONTENT TO BE DECLARED AS SPECIFIED IN COLUMNS 8, 9 AND 10				DECLARATION OF FORMS, SOLUBILITIES AND OTHER NORMS			
				N	P	K		N	P	K	
1	2	TOTAL 3	4	5	6	7		8	9	10	
	origin.										regulation 5(2). (3) The chlorine content may be declared.
											Calcium, magnesium and sulphur may be declared provided the content thereof is at least 10,5 and 10 mg/kg respectively.

TABLE 7
REQUIREMENTS FOR MICRO-NUTRIENT COMPOUNDS THAT ONLY CONTAIN ONE ELEMENT

Product		Minimum Micro-nutrient concentration - g/kg Other requirements	Declarations of Solubilities and other properties
1	2	3	4
7.1	Compounds containing BORON (B)		
1.1	Boric acid	140 g/kg water-soluble B	Water-soluble B
1.2	Sodium borate: Fertilizer grade Spray grade	100 g/kg water-soluble B 150 g/kg water-soluble B	Water-soluble B
1.3	Calcium borate	70 g/kg total B	Water-soluble B, total B
1.4	Boron ethanol amine	80 g/kg water-soluble B	Water-soluble B
1.5	Boron fertilizer in solution or suspension	20 g/kg water-soluble B	Water-soluble B, Total B
1.6	Boron frit		Total B, Specify "slowly available"
7.2	Compounds containing COPPER (Cu)		
2.1	Copper sulphate pentahydrate	250 g/kg water-soluble Cu	Water-soluble Cu
2.2	Copper oxide	700 g/kg total Cu	Total Cu
2.3	Copper hydroxide	450 g/kg total Cu	Total Cu
2.4	Copper oxychloride	500 g/kg total Cu	Total Cu, Particle size at least 98% passing through a 0,063 mm sieve
2.5	Copper oxychloride suspension	170 g/kg total Cu	Total Cu
2.6	Copper EDTA chelate	140 g/kg Cu - solid 117 g/kg Cu - liquid Min 80% chelated	Water-soluble Cu
2.7	Copper fertilizer in dry form manufactured from 2.1, 2.2, 2.3, 2.4 or 2.5	50 g/kg total Cu	Declare components: Total Cu; Soluble Cu optional if water-soluble fraction greater than 25% of total
2.8	Copper fertilizer in solution manufactured from 2.1, 2.2, 2.3, 2.4 or 2.5	30 g/kg water-soluble Cu	Water-soluble Cu; chelated Cu
2.9	Copper amino acid chelate	40 g/kg water-soluble Cu A scientifically accepted method to prove chelation should be provided in order to state that it is an amino acid chelate.	Water-soluble Cu
2.10	Copper frit	150 g/kg total Cu	Total Cu, Specify "slowly available"
7.3	Compounds containing IRON (Fe)		
3.1	Iron sulphate heptahydrate	200 g/kg Fe	Water-soluble Fe

Product		Minimum Micro-nutrient concentration - g/kg Other requirements	Declarations of Solubilities and other properties
1	2	3	4
3.2	Iron sulphate monohydrate	328 g/kg Fe	Water-soluble Fe
3.3	Iron EDTA chelate	60 g/kg Fe - solid 40 g/kg Fe - liquid Min 80% chelated	Water-soluble Fe
3.4	Iron HEDTA	90 g/kg Fe - solid 78 g/kg Fe - liquid Min 80% chelated	Water-soluble Fe
3.5	Iron DTPA chelate	110 g/kg Fe - solid 78 g/kg Fe - liquid Min 80% chelated	Water-soluble Fe
3.6	Iron EDDHA chelate	60 g/kg Fe - solid Min 80% chelated HG - at least 60% of the chelate in "ortho-ortho" form. LG - at least 15% of the chelate in the "ortho-ortho" form.	Water-soluble Fe
3.7	Iron amino acid chelate	50 g/kg water-soluble Fe. A scientifically accepted method to prove chelation should be provided in order to state that it is an amino acid chelate.	Water-soluble Fe
3.8	Iron fertilizer in dry form manufactured from 3.1, 3.2, 3.3, 3.4, 3.5 or 3.6	50 g/kg total Fe	Declare components: Total Fe, chelated Fe optional
3.9	Iron Fertilizer in solution manufactured from 3.1, 3.2, 3.3, 3.4, 3.5 or 3.6	30 g/kg water-soluble Fe	Water-soluble Fe, % chelated Fe optional
3.10	Iron frit	300 g/kg total Fe	Total Fe Specify "slowly available"
7.4	Compounds containing MANGANESE (Mn)		
4.1	Manganese sulphate monohydrate	170 g/kg water-soluble Mn	Water-soluble Mn
4.2	Manganese oxide	400 g/kg total Mn	Total Mn
4.3	Manganese EDTA chelate	130 g/kg Mn - solid 82 g/kg Mn - liquid Min 80% chelated	Water-soluble Mn
4.4	Manganese amino acid chelate	56 g/kg water-soluble Mn. A scientifically accepted method to prove chelation should be provided in order to state that it is an amino acid chelate.	Water-soluble Mn
4.5	Manganese fertilizer in dry form manufactured from 4.1, 4.2 or 4.3	170 g/kg total Mn	Declare components: Total Mn Soluble Mn optional if water-soluble fraction greater than 25% of total

Product		Minimum Micro-nutrient concentrations - g/kg Other requirements	Declarations of Solubilities and other properties
1	2	3	4
4.6	Manganese fertilizer in solution manufactured from 4.1, 4.2 or 4.3	30 g/kg water-soluble Mn	Water-soluble Mn, % chelated Mn optional
4.7	Manganese Frit	200 g/kg total Mn	Total Mn Specify "slowly available"
7.5 Compounds containing MOLYBDENUM (Mo)			
5.1	Sodium molybdate	350 g/kg water-soluble Mo	Water-soluble Mo
5.2	Ammonium molybdate	500 g/kg water-soluble Mo	Water-soluble Mo
5.3	Molybdenum fertilizer in dry form manufactured from 5.1 or 5.2	350 g/kg water-soluble Mo	Water-soluble Mo
5.4	Molybdenum fertilizer in solution manufactured from 5.1 or 5.2	30 g/kg water-soluble Mo	Water-soluble Mo
7.6 Compounds containing ZINC (Zn)			
6.1	Zinc sulphate heptahydrate	220 g/kg water-soluble Zn	Water-soluble Zn
6.2	Zinc sulphate monohydrate	350 g/kg water-soluble Zn	Water-soluble Zn
6.3	Zinc nitrate hexahydrate	220 g/kg - water-soluble Zn	Water-soluble Zn
6.4	Zinc nitrate hexahydrate solution	140 g/kg - water-soluble Zn	Water-soluble Zn
6.5	Zinc oxide	500 g/kg total Zn	Total Zn
6.6	Zinc EDTA chelate	150 g/kg Zn - solid 130 g/kg Zn - liquid Min 80% chelated	Water-soluble Zn
6.7	Zinc amino acid chelate	68 g/kg water-soluble Zn A scientifically accepted method to prove chelation should be provided in order to state that it is an amino acid chelate.	Water-soluble Zn
6.8	Zinc fertilizer in dry form manufactured from 6.1, 6.2, 6.3, 6.4, 6.5 or 6.6	300 g/kg total Zn	Declare components: Total Zn Soluble Zn optional if water-soluble fraction greater than 25% of total
6.9	Zinc fertilizer in solution manufactured from 6.1, 6.2, 6.3, 6.4, 6.5 or 6.6	30 g/kg water-soluble Zn	Water-soluble Zn, % chelated Zn optional
6.10	Zinc Frit	180 g/kg total Zn	Total Zn, specify "slowly available"
Notes relating to table:			
1. A chelating agent may be indicated using its abbreviation as set out in Table 10.			
2. Where the micro-nutrient is present in chelate form, the pH range in which it is stable must be given.			
3. Trade marks may be added to the names in all cases.			
4. The combined cation and/or anion, whichever is applicable, must be indicated with the micro-nutrients.			
5. Inert filler material may be used in product formulation.			
6. The label must contain guidelines/ instructions for application in respect to crop, dosage and method of application.			

TABLE 8

**MICRO-ELEMENT MIXTURES:
MINIMUM CONTENT PER ELEMENT IN g/kg**

ELEMENT	FORM IN WHICH ELEMENT PRESENT		
	MINERAL	CHELATE	MINERAL & CHELATE
1	2	3	4
Boron (B)	2	-	2
Copper (Cu)	0,5	0,1	0,5
Iron (Fe)	20	3	20
Manganese (Mn)	5	1	5
Molybdenum (Mo)	0,2	-	0,2
Zinc (Zn)	5	1	5

Notes in respect of Table:

1. Values in table refer to solid and liquid products.
2. Only products complying with the requirements of table 7 may be used in micro-element mixtures.
3. Minimum total micro-element content for:
 Powders/ granular mixtures - 50 g/kg
 Liquid mixtures - 20 g/kg
4. The label must indicate the total and/ or water-soluble content for each micro-element.
5. Guidelines for application in respect of crop, dosage and application method must appear on the label.

TABLE 9
FERTILIZERS THAT CONTAIN BOTH MICRO- AS WELL AS MACRO-ELEMENTS: MINIMUM CONTENT PER MICRO-ELEMENT IN g/kg

ELEMENT	FOR APPLICATION METHOD		
	SOIL APPLICATION	WATER CULTURE	FOLIAR SPRAY
1	2	3	4
Boron (B)	0,1	0,1	0,1
Copper (Cu)	0,1	0,02	0,02
Iron (Fe)	5	0,2	0,2
Manganese (Mn)	1	0,1	0,1
Molybdenum (Mo)	0,01	0,005	0,005
Zinc (Zn)	1	0,1	0,1

Notes in respect of Table:

1. Only micro-element products complying with the requirements of Table 7 may be used.
2. Each label must indicate the total and water-soluble amounts.
3. Guidelines for application in respect of crop, dosage and application method must appear on the label.

TABLE 10
APPROVED ORGANIC CHELATING AGENTS

Chelating Agent	Recognised abbreviation
1	2
Sodium, Potassium or Ammonium salts of:	
Ethylenediaminetetraacetic acid	EDTA
Diethylenetriaminepentaacetic acid	DTPA
[o,o] ethylenediamine-di (o-hydroxyphenyl acetic) acid	EDDHA
[o,p] ethylenediamine-di (p-hydroxyphenyl acetic) acid	EDDHA
2-hydroxyethylethylenediaminetriacetic acid	HEEDTA
[o,o] ethylenediamine-di (o-hydroxy- <i>o</i> -methylphenylacetic) acid	EDDHMA
[o,p] ethylenediamine-di (o-hydroxy- <i>p</i> -methylphenylacetic) acid	EDDHMA
[p,o] ethylenediamine-di (p-hydroxy- <i>o</i> -methylphenylacetic acid)	EDDHMA
[2,4] Ethylenediamine di (2-hydroxy-4-carboxyphenylacetic) acid	EDDCHA
[2,5] Ethylenediamine di (2-hydroxy-5-carboxyphenylacetic) acid	EDDCHA
[5,2] Ethylenediamine di (5-hydroxy-2-carboxyphenylacetic) acid	EDDCHA

Notes in respect to Table:

1. The list may be augmented with the necessary biological confirmation of efficacy.
2. International chemical abbreviations may be used to indicate the name of the product.

TABLE 11
REQUIREMENTS FOR URBAN WASTE

PARAMETER	PERMISSIBLE LEVELS
1	2
Moisture	400 g/kg maximum
Inorganic materials	700 g/kg maximum
Plastic	20 g/kg maximum
Glass (5,6 mm)	20 g/kg maximum
Organic matter	150 g/kg minimum
Fatty acids	2 000 mg/kg maximum
Growth index	0,6 mg/kg minimum
Ascaris ova	0 (Absent)
Coliphage	0 (Absent)
Salmonellae	0 (Absent)

TABLE 12**MAXIMUM LEVELS OF POTENTIALLY HARMFUL ELEMENTS PERMITTED IN FERTILIZER PRODUCTS**

ELEMENTS	Maximum inorganic content in mg/kg in dry sewage sludge*	Liming material and other products	Chemically compounded solid fertilizers (NPK) or Straights mg/kg	Chemically compounded liquid fertilizers (NPK) or Straights mg/kg	Foliar & Horticultural fertilizers mg/kg	Micro elements for soil Application mg/kg per 1% macro - nutrient
Cadmium	20	20	20	20	20	2.6
Cobalt	100					
Chromium	1750	1750	1750	1750	1750	
Copper	750	750**	750**	750**	750**	
Mercury	10	10	10	10	10	1.3
Molybdenum	25					
Nickel	200	200	200	200	200	
Lead	400	400	400	400	200	128.2
Zinc	2750	2750**	2750**	2750**	2750**	
Arsenic	15	20	20	20	20	12.8
Selenium	15	15	15	15	15	
Boron	80					
Fluorine	400					

*User must be informed about the moisture and N P K content and must be warned that not more than 8 t/ha/year (or 110 kg/ m²) (dry sewage sludge) may be applied to soil and that the pH of the soil should be higher than 6.5. (In the event that there are guidelines by Department of Water Affairs to sewage sludge, the applicant must adhere to such guidelines before the application can be evaluated).

**Except where they are applied as sources of micro-nutrient.

TABLE 13
REQUIREMENTS FOR GUANO AND OTHER PRODUCTS DERIVED FROM ANIMAL ORIGIN

1	Minimum nitrogen content	Minimum of sum of nitrogen, total phosphorus and total potassium content	Further requirements	Particulars of plant nutrients to be indicated
	2	3	4	5
	g/kg	g/kg		
Guano	70	120	Shall consist mainly of the excreta of sea birds	(i) Nitrogen content (N)
Phosphate guano	30	100		(ii) Total phosphorus content P
				(iii) Total potassium content K
Carcass meal	60	100	Shall be of animal origin and be sterilized according to an approved method under Regulations regarding Sterilizing Plants.	
Hoof and horn meal	60	100		
Bonemeal	40	100		

TABLE 14

NAME OF PRODUCT	METHOD OF MANUFACTURE	MINIMUM NUTRIENT CONTENT; OTHER REQUIREMENTS	MINIMUM NITROGEN CONTENT	DECLARATION OF FORMS, SOLUBILITIES AND OTHER NORMS		
		TOTAL	PER ELEMENT	N	P	K
1	2	3	4	5	6	7
Organic fertilizer or organic fertilizer mixture	A product formed by mixing the different organic fertilizers, without addition of inorganic fertilizers	40 g/kg	None specific	None specific	Citric acid solution P Optional Total P	None Specific
Enriched organic fertilizer	A product that is formed by mixing organic and inorganic fertilizers; with an organic component of at least 500 g/kg (C x 1,72)	100 g/kg	10 g/kg	Total N	Citric acid soluble P (optional) Total P If raw phosphate is a component of the mixture, the application for registration must specify the fineness and origin of the raw phosphate and citric soluble P must be given.	Total K

Mixture name depends on total N, P and K. The type/origin of the organic component must be declared with an optional declaration of the organic content.

TABLE 15

REQUIREMENTS FOR AGRICULTURAL LIME MATERIAL (OVEN DRY BASIS)

1	2	3	4	5	6	7	8
NAME OF LIMING MATERIAL	CALCIUM	MAGNESIUM	SiO ₂	CaCO ₃	MgCO ₃	Ca and Mg	CCE (Strong acid) KKE (sterk-suur)
	Min g/kg	Max g/kg	Min g/kg	Max g/kg	Min g/kg	Oxides Min. g/kg	Hydro xides Min %
Calcitic agricultural lime							70
Dolomitic agricultural lime		43					70
Magnesite	10	275		25	970		70
Calcite	380			950		35	70
Unslaked calcitic agricultural lime						700	70
Slaked calcitic agricultural lime						700	70
Unslaked dolomitic agricultural lime		43				700	70
Slaked dolomitic agricultural lime		43				700	70
Shell lime							70
Slags and silicates			300				
Magnesian agricultural lime		190					70

TABLE 16
PERMISSIBLE DEVIATIONS IN MAIN AND SECONDARY ELEMENTS IN INORGANIC FERTILIZER MIXTURES

REGISTERED PLANT NUTRIENT CONTENT, E %	DEVIATION (D) FROM E PERMITTED	RELATIVE DEVIATION (RD) FROM E PERMITTED
1	2	3
1	0,25	25,0
2	0,30	14,9
3	0,34	11,5
4	0,39	9,8
5	0,44	8,8
6	0,48	8,1
7	0,53	7,6
8	0,58	7,2
9	0,63	6,9
10	0,67	6,7
12	0,77	6,4
14	0,86	6,1
16	0,95	6,0
18	1,05	5,8
20	1,14	5,7
25	1,38	5,5
30	1,61	5,4
35	1,84	5,3
40	2,08	5,2

Values not given in the table can be derived from the following formula:

$$D = 0,046875E + 0,203125$$

$$RD = \frac{20,3125}{E} + 4,6875 = \frac{D}{E} \times 100$$

* N, P, K, Ca, Mg and/ or S

** Including ammonified superphosphate

TABLE 17
PERMISSIBLE DEVIATIONS IN MAIN AND SECONDARY ELEMENTS IN CHEMICALLY COMPOUNDED FERTILIZERS

REGISTERED PLANT NUTRIENT CONTENT, E %	DEVIATION (D) FROM E PERMITTED	RELATIVE DEVIATION (RD) FROM E PERMITTED %
1	2	3
5	0,47	9,4
6	0,49	8,1
7	0,50	7,2
8	0,52	6,5
9	0,54	6,0
10	0,55	5,6
12	0,59	4,9
14	0,62	4,5
16	0,66	4,1
18	0,69	3,9
20	0,73	3,6
25	0,82	3,3
30	0,90	3,0
35	0,99	2,8
40	1,08	2,7
45	1,16	2,6
50	1,25	2,5

Values not given in the table can be derived from the following formula:

$$D = 0,01738, E + 0,3810$$

$$RD = \frac{38,10}{E} + 1,738 = \frac{D}{E} \cdot 100$$

* N, P, K, Ca, Mg and S

TABLE 18
PERMISSIBLE DEVIATIONS IN ADDED MICRO-ELEMENTS IN FERTILIZER MIXTURES

REGISTERED MICRO-ELEMENT CONTENT (E) %	DEVIATION (D) FROM E PERMITTED	RELATIVE DEVIATION (RD) FROM E PERMITTED %
1	2	3
0,10	0,040	40,0
0,25	0,075	30,0
0,50	0,133	26,7
0,75	0,192	25,6
1,00	0,250	25,0

Values not given in the table can be derived from the following formula:

$$D = 0,233333 E + 0,016667$$

$$RD = \frac{1,6667}{E} + 23,3333 = \frac{D}{E} \times 100$$

TABLE 19
FERTILIZERS IN CONTAINERS

NUMBER OF CONTAINERS IN SAMPLED PORTION 1	NUMBER OF CONTAINERS TO BE SELECTED FOR SAMPLING 2
1 to 7	All containers
8 to 49	Not less than 7
50 to 64	Not less than 8
65 to 81	Not less than 9
82 to 100	Not less than 10
101 to 121	Not less than 11
122 to 144	Not less than 12
145 to 169	Not less than 13
170 to 196	Not less than 14
197 to 225	Not less than 15
226 to 256	Not less than 16
257 to 289	Not less than 17
290 to 324	Not less than 18
325 to 361	Not less than 19
362 and above	Not less than 20

TABLE 20
LOOSE FERTILIZERS

SIZE OF SAMPLED PORTION IN TONS	NUMBER OF INCREMENTAL SAMPLES REQUIRED
1	2
Up to and including 2.5	Not less than 7
Greater than 2.5 and up to and including 3	Not less than 8
Greater than 3 and up to and including 4	Not less than 9
Greater than 4 and up to and including 5	Not less than 10
Greater than 5 and up to and including 6	Not less than 11
Greater than 6 and up to and including 7	Not less than 12
Greater than 7 and up to and including 8	Not less than 13
Greater than 8 and up to and including 9	Not less than 14
Greater than 9 and up to and including 11	Not less than 15
Greater than 11 and up to and including 12	Not less than 16
Greater than 12 and up to and including 14	Not less than 17
Greater than 14 and up to and including 16	Not less than 18
Greater than 16 and up to and including 18	Not less than 19
Greater than 18 and up to and including 20	Not less than 20
Greater than 20 and up to and including 22	Not less than 21
Greater than 22 and up to and including 24	Not less than 22
Greater than 24 and up to and including 26	Not less than 23
Greater than 26 and up to and including 28	Not less than 24
Greater than 28 and up to and including 31	Not less than 25
Greater than 31 and up to and including 33	Not less than 26
Greater than 33 and up to and including 36	Not less than 27
Greater than 36 and up to and including 39	Not less than 28
Greater than 39 and up to and including 42	Not less than 29
Greater than 42 and up to and including 45	Not less than 30

SIZE OF SAMPLED PORTION IN TONS	NUMBER OF INCREMENTAL SAMPLES REQUIRED
1	2
Greater than 45 and up to and including 48	Not less than 31
Greater than 48 and up to and including 51	Not less than 32
Greater than 51 and up to and including 54	Not less than 33
Greater than 54 and up to and including 57	Not less than 34
Greater than 57 and up to and including 61	Not less than 35
Greater than 61 and up to and including 64	Not less than 36
Greater than 64 and up to and including 68	Not less than 37
Greater than 68 and up to and including 72	Not less than 38
Greater than 72 and up to and including 76	Not less than 39
Greater than 76	Not less than 40

TABLE 21
LIQUID FERTILIZERS

NUMBER OF CONTAINERS IN SAMPLED PORTION	NUMBER OF CONTAINERS TO BE SELECTED FOR SAMPLING
1	2
1 to 3	All containers
4 to 20	Not less than 4
21 to 60	Not less than 6
61 to 100	Not less than 8
101 to 400	Not less than 10
More than 400	Not less than 20

ANNEXURE C

APPROVED PORTS OF ENTRY

Land boarder posts	International Airports	International harbours	Inland
Beitbridge	Cape Town	Cape Town	Johannesburg
Caledonspoort	Durban	Durban	Kimberly
Ficksburg	Gateway (Polokwane)	East London	Pretoria
Golela	OR Tambo	Mossel Bay	Mmabatho
Groblersburg	Lanseria	Port Elizabeth	Pietermaritzburg
Kapfontein	Port Elizabeth	Richards Bay	Upington
Jeppesreef	Richards Bay	Saldanha Bay	Bloemfontein
Lebombo	Upington		Stellenbosch
Mahamba	Bloemfontein		Germiston
Mananga	Mafikeng		
Maseru bridge			
Nakop			
Nerston			
Oshoek			
Qachas' Nek			
Ramatlabana			
Skipadshek			
Van Rooyenshek			
Vioolsdrif			

ANNEXURE D



agriculture, forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

PRIVATE BAG X343, PRETORIA, 0001

CERTIFICATE IN RESPECT OF THE TAKING OF SAMPLES IN TERMS OF SECT. 15 OF ACT 36/1947

Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947) (To be completed in quintuplicate †)

It is hereby certified that the accompanying sample of fertilizer, identified by the above serial number, was taken by me on the day of 20..... at in the presence of (Name of owner/person in charge of stocks/witness) from the stock of (Name and address of seller)

PARTICULARS OF FERTILIZER FROM WHICH SAMPLE WAS TAKEN

1. Name of registration holder
2. Trade name#
3. Name of product#
4. Registration number#

--	--	--	--	--

 Act 36/1947
5. Composition#
- 5.1 Fertilizer: N: P: K: Zn: other
6. Condition of container from which sample was taken
7. Estimated quantity of fertilizer from which sample was taken:
- 7.1 Number of containers: 7.2 Capacity of containers: kg/l
8. Remarks.....
.....
.....
.....

Signature of witness

Registrar

† One copy shall accompany each of the three parts of the sample and the fifth copy shall be kept by the officer who took the sample.

Shall be the particulars as indicated on the label affixed to the containers from which the sample was taken or as it is marked on such containers, or if the article which is sampled, is not sold in containers, as it appears on the invoice is supplied together with that article.

ANNEXURE E**SAMPLING OF FERTILIZERS****A. General instructions for the taking of samples**

1. Samples for the purpose of the Act must only be taken by the Registrar or his delegate and any authorised person in terms of the Act.
2. In the case of fertilizer in containers, only unopened containers must be selected for the purpose of sampling.
3. The sample must be taken and prepared as quickly as possible taking precautions to ensure that it remains representative of the sampled portion. Instruments, surfaces and containers used in sampling must be clean and dry.
4. No sample must be drawn from any part of the sampled portion, which appears to be damaged.
5. When lumps are naturally present in a fertilizer, they must be broken up and mixed with the quantity from which a sample is to be drawn.
6. An inspector who intends to take a sample on premises must:
 - (a) satisfy himself that the conditions in which the fertilizer is stored are not such as might cause undue deterioration of the said fertilizer and that the fertilizer appears not to have been contaminated by any other material;
 - (b) where he has reasonable cause to believe that fertilizer in containers is only part of an original consignment, select the number of containers to be sampled as if not less than the whole consignment, were still present, except that sampling shall not take place if fewer than the minimum number of containers prescribed in Table 19 of these Regulations shall be available.
7. The sampling apparatus must be made of materials which cannot affect the characteristics of the fertilizer to be sampled.
8. In the case of a sampling spear its dimensions shall be appropriate to the characteristics of the sampled portion in all respects including dimensions of the container and particle size of the fertilizer.

A shuttered sampling spear, consisting of two metal tubes, one of which is a close sliding fit, inside the other, shall be used.

The inner diameter shall be at least 15 mm. Down one side of the outer tube, a series of slots is cut with a corresponding series of slots cut on one side of the inner tube. The width of the slots shall be at least 12 mm and the combined length of the slots must exceed 75% of the total sampling length of the spear.

When sampling, the spear is inserted diagonally through the whole width of the container, with the slots closed. The inner tube is then rotated to open the slots and the spear tapped and worked about to encourage material to flow through the slots. The inner tube is then rotated to close the slots and the spear withdrawn. The sample is emptied into a suitable container.
9. Notwithstanding the provisions of these Regulations, a sampling spear must not be used if, prior to the taking of a sample, objection is raised thereto by the manufacturer on the grounds that the material is unsuitable.
10. Mechanical apparatus may be used for the sampling of moving fertilizers, if the apparatus is capable of taking samples right across the flow of the product.

11. Apparatus designed to divide the sample into approximately equal parts may be used for taking incremental samples and for the preparation of reduced and final samples.
12. A sample taken in accordance with the methods described in Paragraph C must be deemed to be representative of the sampled portion.
13. When a sample is taken at a plant or elsewhere than a plant in terms of Section 15(1) of the Act, the person in charge of the undertaking or an officer as intended and authorised in terms of Section 2(2)(a) of the Act shall take such sample using the methods described in part IV hereof: Provided that should the holder of the registration, his employee or agent sign the certificate relating to the sample taken, the method of sampling cannot become the subject of dispute.

B. Quantitative requirements

1. Sampled portion

Sample portion must be identified and specified on site in conjunction with manufacturer/supplier. Such sampled portion must be such that each of its constituent parts can be sampled in accordance with the requirements of this Regulation.

2. Incremental sample

The incremental samples must be selected in the following manner:

- (a) in the case of solid fertilizers in containers -
 - (i) where the content of each of the containers in the sampled portion is more than 1 kg in mass the number of containers must be selected in accordance with Table 20 of these Regulations;
 - (ii) where the content of each of the containers in the sampled portion does not exceed 1 kg in mass, the number of containers must be selected in accordance with Table 19 of these Regulations, except that the number selected shall not be less than four;
- (b) in the case of loose solid fertilizers the number of incremental samples must be selected in accordance with Table 20 of these Regulations;
- (c) in the case of fluid fertilizer -
 - (i) where each container in the sampled portion contains not more than 100 litres the number of containers must be selected in accordance with Table 21 of these Regulations;
 - (ii) where each container in the sampled portion contains more than 100 litres an incremental sample must be drawn from each container.

3. Composite sample

The appropriate mass or volume of the composite sample must not be less than the following:

- (a) solid fertilizers in container -

(i) containers of more than 1 kg	3 kg (6 kg for bulk blends)
(ii) containers not exceeding 1 kg	3 kg
- (b) loose solid fertilizers 3 kg (6 kg for bulk blends)
- (c) fluid fertilizers -

(i) containers exceeding 250 000 litres	5 litres
---	----------

- | | | |
|-------|---|----------|
| (ii) | containers exceeding 1 litre but not exceeding 250 000 litres | 4 litres |
| (iii) | containers not exceeding 1 litre | 2 litres |

4. Final sample (i.e. identical sub-samples)

The appropriate mass or volume of each final sample must not be less than the following:

- | | | |
|-----|-------------------|------------------------------------|
| (a) | solid fertilizers | 1 000 g (2 000 g for bulk blends); |
| (b) | fluid fertilizers | 500 cm ³ |

C. Taking and preparation of samples

1. Incremental samples

Incremental samples of approximately equal sizes must be taken at random throughout the whole sampled portion in the following manner:

- (a) in the case of solid fertilizers in containers
 - (i) having selected the required number of containers for sampling in accordance with paragraph B 2(a), part of the content of each selected container must be taken as the incremental sample, except in the case of material to which subparagraph (iv) of this paragraph applies;
 - (ii) where necessary, each selected container must be emptied and worked up with a shovel separately and one shovelful taken as the incremental sample;
 - (iii) when the material is of a suitable nature the incremental sample may be taken from each selected container by means of a sampling spear or by divider;
 - (iv) when the material is so packed or of such a nature that a shovel or spear or divider cannot be used, or where the content of the container does not exceed 1 kg, the whole container shall be taken as the incremental sample;
 - (v) where the fertilizer is in a coarse or lumpy condition incremental samples must be taken in accordance with subparagraph (ii) or (iv) of this paragraph where appropriate. These must be crushed immediately and the whole sample passed through a standard sieve with 5,6 mm apertures;
 - (vi) where the fertilizer consists of bulky material, uneven in character and likely to get matted together, each selected package must be emptied separately and the matted portions be broken up and the whole of the contents of each package must be thoroughly mixed. The incremental samples must then be taken in accordance with subparagraph (ii) or (iv) of this paragraph where appropriate;
- (b) in the case of loose solid fertilizers -
 - (i) sampling in the stationary state is not recommended;
 - (ii) when sampling is being carried out while the material comprising the sampled portion is in motion, the incremental samples shall be taken from the approximately equal parts as required in Table 20 of these Regulations at equal time intervals;
 - (iii) where the fertilizer is in a coarse or lumpy condition, or consists of bulky material, uneven in character and likely to get matted together, the incremental samples must be taken in accordance with the relevant provisions of paragraph C1(a)(v) or (vi), where appropriate;
- (c) in the case of fluid fertilizers in containers each containing not more than 100 litres, the number of containers to be selected must be taken in accordance with Table 21 of these Regulations and -
 - (i) where each container contains not more than 1 litre the entire contents of the selected containers must be transferred into a clean dry vessel of suitable material;

- (ii) where each container contains more than 1 litre and not more than 100 litres the selected containers shall be well shaken or the contents agitated or otherwise treated to ensure uniformity. An approximately equal proportion of fluid shall then be taken immediately from each of the selected containers and transferred into a clean dry vessel of suitable material;
- (d) in the case of fluid fertilizers in containers each containing more than 100 litres -
 - (i) when a consignment is being withdrawn from the container and there is a tap in the outlet pipe from which it is suitable to draw a sample, a quantity of not less than 4 litres must be drawn from the tap (after first withdrawing sufficient to remove any residues in the pipe) into a clean dry vessel of suitable material made up of portions not less than 0,5 litres and of approximately equal size taken at regular intervals;
 - (ii) if the liquid is homogeneous, about 1 litre must be drawn from a convenient outlet in the container (after first withdrawing sufficient to remove any residues in the outlet) into a clean dry vessel of suitable material;
 - (iii) if the liquid is not homogeneous, the contents must be well stirred or otherwise agitated and sampling must then proceed as in subparagraph (ii),
 - (iv) if it is not possible to make the liquid homogenous, in the manner described in subparagraph (iii), or if the inspector considers that the procedure in subparagraphs (d), (ii) and (iii) may not be appropriate, the contents must be sampled by using the modified Indiana sampler. The appropriate process must be repeated until a quantity of not less than 4 litres has been withdrawn; or
 - (v) where a sampled portion consists of two or more containers, incremental samples of approximately equal size must be taken from each, drawn in the manner described in subparagraphs (d), (ii), (iii) or (iv), where appropriate, and must be placed in a clean dry vessel of suitable material.
- (e) If increments are taken by sampling spear, not less than two cores per sampling point must be taken to give not less than 12 cores.

2. Composite sample

The incremental samples must be combined and thoroughly mixed to form a single composite sample. In the case of solid fertilizers the material in the composite sample must be carefully mixed to obtain a homogenised sample. Any lumps inconsistent with the nature of the material must be broken up (if need be by separating them out and returning them to be the composite sample).

3. Reduced sample

- (a) In the case of solid fertilizers the composite sample must, if necessary, be reduced to not less than given in paragraph B in the following manner:
 - (i) the material must be heaped to form a "cone", which must then be flattened and quartered. Two diagonally opposite quarters must be rejected and the remainder must then be mixed and the quartering and rejection contained as necessary; or
 - (ii) the reduction method effected by the use of a mechanical device.
- (b) In the case of fluid fertilizers, the composite sample consists of approximately 2 litre may be taken as the reduced sample. In all other cases the composite sample must be thoroughly mixed and a quantity of at least 2 litres transferred immediately into a clean dry vessel of suitable material.

4. Final samples

The final samples must be obtained in the following manner:

- (a) in the case of solid fertilizers, the reduced sample or where necessary the composite sample must be thoroughly mixed and divided into three equal parts, and each part placed in an appropriate airtight container;
- (b) in the case of fluid fertilizers the reduced sample or where necessary the composite sample must be thoroughly mixed and immediately divided into approximately equal parts by pouring successive portions into appropriate airtight containers. The containers used must be such that the characteristics of the fertilizer at the time of sampling are preserved. The final sample must be kept at temperatures below 25 degrees Celsius.

D. Marking, sealing and fastening up of the final sample

1. Each container of a final sample must be secured and sealed by the person taking the sample so that the container cannot be opened without breaking the seal.
2. A label must be attached to the container and must be marked with the following particulars, which must not be hidden by the seal:
 - (a) name of the inspector as well as the department to which he belongs;
 - (b) identification mark given by the inspector to the sample;
 - (c) place of sampling;
 - (d) date of sampling;
 - (e) name of the material; and
 - (f) identification code, batch reference number or consignment identification of the material sampled, where readily available.