MARKETING OF NON-EEC FERTILISERS REGULATIONS 1978

I, JAMES GIBBONS, Minister for Agriculture, in exercise of the powers conferred on me by sections 2, 3, 4, 5, 8 and 11 of the Fertilisers, Feeding Stuffs and Mineral Mixtures Act, 1955 (No. 8 of 1955), after consultation with the Minister for Industry, Commerce and Energy, hereby make the following Regulations (the sanction of the Minister for Finance having been given in relation to the fees specified in Regulation 12):

REG 1

Short title and commencement
1. (1) These Regulations may be cited as the Marketing of Non-EEC Fertilisers Regulations, 1978.
(2) Subject to paragraph (3) of this Regulation, these Regulations shall come into force on the 1st day of October, 1978.
(3) During the period beginning on the 1st day of October, 1978 and ending on the 30th day of June, 1979, these Regulations shall have effect only in relation to fertilisers manufactured during that period.

REG 2

Interpretation.
2. (1) In these Regulations—
"the Act" means the Fertilisers, Feeding Stuffs and Mineral Mixtures Act, 1955 (No. 8 of 1955);
"the Commission Directive" means Commission Directive No. 77/535/EEC of 22nd June 1977 (a)
(a) OJ No. L 213/1 22 August, 1977.
"ground limestone" means any liming material which is comprised of crushed or milled natural limestone consisting mainly of either calcium carbonate or calcium carbonate and magnesium carbonate;
"liming material" means any fertiliser intended for use as a corrective of soil acidity;
"the Sampling and Analysis Regulations" means the European Communities (Sampling and Analysis of Fertilisers) Regulations, 1978 (S.I. No. 12 of 1978);
"specified fertiliser" has the meaning assigned to it by paragraph (2) of this Regulation;
"statute" has the same meaning as in section 3 of the Interpretation Act, 1937 (No. 38 of 1937).
(2) For the purposes of these Regulations a specified fertiliser is any fertiliser which is a fertiliser to which these Regulations apply and which either is a liming material or complies with each of the following requirements, namely:
(a) it is a type of fertiliser specified in column (1) of Part I of the Schedule to these Regulations,
(b) it is a product described in column (2) of the said Part I opposite the mention in the said column (1) of its type of fertiliser,
(c) it complies with the requirements as to the minimum content of nutrients specified in column (3) of the said Part I opposite such mention and any other requirements so specified,

(d) it complies with the requirements (if any) specified in column (4) or (5) of the said Part I opposite such mention,
(e) there are given or used the compulsory particulars and identification markings mentioned in paragraph 1 of Part II of the said Schedule,
(f) in case the measured value of a nutrient contained in the fertiliser deviates from the nutrient's declared value, such deviation is within the relevant tolerances specified in Part III of the said Schedule,
(g) in case the fertiliser is packaged, the package is closed in such a way or by such a device that, when it is opened, the fastening, fastening seal or the package itself is irreparably damaged,
(h) the labelling requirements of paragraph 2 of Part II of the said Schedule are complied with in relation to it,
(i) (i) in case the quantity of fertiliser contained in a container does not exceed 100 kg, all particulars and markings are either marked on the container or appear on a label attached to the container,
(ii) in case the quantity of fertiliser so contained exceeds 100 kg or in case the fertiliser is in bulk, all particulars and markings appear on documents accompanying the fertiliser,
(j) the markings or particulars used, either on the packages or labels relating to it or on accompanying documents so relating, are at least in the Irish language or the English language, and
(k) there are not so used markings or particulars other than—
(i) particulars given or markings used for the purpose of complying with a condition specified in subparagraph (e) of this paragraph,
(ii) in case a nutrient which it contains is not a nutrient mentioned in the said Part I, the declared content of such nutrient expressed as a percentage by weight,
(iii) optional data (if any) regarding the fertiliser which is data listed in column (4) or (5) of Part I of the said Schedule,
(iv) the trade mark or the trade description of the fertiliser,
(v) in case the fertiliser is imported, the name, trade name or trade mark and the address of the importer of the fertiliser,
(vi) specific directions for use, handling or storage of the fertiliser,
(vii) markings permitted or required to be used by Section 16 of the Merchandise Marks Act, 1887, by Section 20 of the Merchandise Marks Act, 1931, (No. 48 of 1931), by any act of the European Communities within the meaning of the European Communities Act, 1972 (No. 27 of 1972), or by any statutory instrument other than these Regulations,
(viii) when the markings are indications referred to in clause (iv), (v), or (vi) of this subparagraph, or any of them, they, if used, do not conflict with, and are clearly separated from, the markings mentioned in clause (i) of this subparagraph and, where used, the declared content referred to in clause (ii) or the data mentioned in clause (iii) of this subparagraph, and
(ix) where the markings or particulars are the markings or particulars referred to in subparagraph (e) of this paragraph, or a declared content referred to in the said clause (ii) or any data which is data mentioned in the said clause (iii), or any mark or description which is a mark or description referred to in the said

clause (iv), or any particulars which are particulars referred to in the said clause (v) or any direction which is a direction referred to in the said clause (vi) such markings or particulars are clearly separated from any other information on packages containing, or labels or other documents used in relation to the fertiliser.

REG 3

Application.
3. These Regulations apply to any fertiliser which is a fertiliser to which the European Communities (Marketing of Fertilisers) Regulations, 1978 (No. 13 of 1978), do not apply.

REG 4

Marketing requirements.
4. A fertiliser to which these Regulations apply shall not be sold if it is not a specified fertiliser.

REG 5

Licence for manufacture of ground limestone.
5. A person shall not manufacture for sale any ground limestone save under and in accordance with a licence issued to him by the Minister under these Regulations.

REG 6

Particulars to appear on statement (Liming Materials).
6. (1) With respect to a liming material, the following particulars are hereby prescribed for the purposes of section 2 (1) of the Act:
(a) the business name and address of the seller of the material to which the statement relates,
(b) the date on which the material was sold to the purchaser,
(c) the name under which the material was sold,
(d) the weight of the material sold,
(e) the neutralising value of the material sold, as determined in accordance with Part V of the Schedule to these Regulations,
(f) in case the material is ground limestone,
(i) the proportion of the material that will pass through a sieve with a mesh of 3·35mm when tested in accordance with Part VI of the Schedule to these Regulations, and
(ii) the proportion of the material that will pass through a sieve with a mesh of 150µm when so tested, and
(iii) the moisture content of the material, when determined in accordance with Part IV of the Schedule to these Regulations.
(2) The particulars referred to in paragraph (1) (e) of this Regulation shall be expressed in terms of calcium carbonate.
(3) In the particulars referred to in paragraph (1) (f) of this Regulation each amount shall be expressed as a percentage of the weight of the ground limestone.

REG 7

Statement to be given on delivery (Liming Materials).
7. A statement for the purposes of section 2 (1) of the Act and relating to a liming material shall be given at the time of the delivery of the material.

REG 8

Moisture content, neutralising value and fineness (Ground Limestone).
8. (1) The moisture content of a liming material which is ground limestone, as determined in accordance with Part IV of the Schedule to these Regulations, shall not be more than 3 per cent.
(2) The moisture content shall not be determined where samples of ground limestone are taken under section 3 of the Act.
(3) The neutralising value of a liming material which is ground limestone as determined in accordance with Part V of the Schedule to these Regulations shall not be less than 90 per cent.
(4) In a test of ground limestone for fineness in accordance with Part VI of the Schedule to these Regulations, all the ground limestone so tested shall be passed through a sieve with a mesh of 3.35mm and not less than 35 per cent of that ground limestone shall be passed through a sieve with a mesh of 150 µm.

REG 9

Sampling.
9. (1) As regards any fertiliser, other than a liming material, which is a fertiliser to which these Regulations apply the following manner of taking samples is hereby prescribed for the purposes of sections 3 and 8 of the the Act:
(a) in case the fertiliser to be sampled is a solid fertiliser, the manner specified in the Sampling and Analysis Regulations, and
(b) in case such fertiliser to be sampled is a liquid fertiliser, the manner specified in the said Regulations subject to the following modifications:
(i) samples shall be taken and prepared as quickly as possible bearing in mind the precautions necessary to ensure that they remain representative of the fertiliser sampled,
(ii) instruments and also surfaces and containers intended to receive samples shall be clean and dry,
(iii) the size of a sampled portion must be such that each of its constituent parts can be sampled,
(iv) where containers contain more than one litre of liquid fertiliser, they shall be selected from the sampled portion in the following manner:

Minimum number of containers to be sampledWhere the sampled portion contains one to four containersAll containersWhere the sampled portion contains five to sixteen containers FourWhere the sampled portion contains more than sixteen containersThe square root of the number of containers in the sampled portion rounded up to the nearest whole number, subject to a maximum of twenty containers.

(v) where containers containing such fertiliser have a capacity not exceeding one litre, a minimum of four containers shall be sampled,

(vi) the required number of containers having been selected at random shall be well shaken or the contents agitated to ensure uniformity and an amount shall be taken from each container to form incremental samples of approximately equal size,

(vii) an aggregate sample for each sampled portion shall then be formed from the total of the incremental samples taken and must measure at least four litres if the sample is taken from containers of more than one litre in capacity; but where the containers do not exceed one litre in capacity the aggregate sample must be formed from the total contents of the four original containers,

(viii) at least three final samples of approximately equal size shall be obtained by reduction of the aggregate sample and their individual volume shall not be less than 500 ml,

(ix) each final sample shall be put into an appropriate air-tight container and all necessary precautions shall be taken to avoid any change in the characteristics of the sample,

(x) paragraphs 5 and 6 of Annex I to the Commission Directive, which by virtue of these Regulations, apart from this subparagraph, would fall to be applied, shall not apply.

(2) As regards liming materials the following manner of taking samples is hereby prescribed for the purposes of sections 3 and 8 of the Act:

(a) (i) approximately equal portions of the material shall be taken (by means of a sampling spear, spade, trowel or other suitable instrument) from different parts of the liming material.

(ii) the number of portions to be taken shall be in accordance with the following scale:

where the quantity to be sampled is 2½ tonnes—
7 portions;
where the quantity to be sampled exceeds 2½ tonnes—
the square root of 20 times the number of tonnes making up the quantity to be sampled subject to a maximum of 40 portions.

(iii) where the number obtained in pursuance of clause (ii) of this subparagraph is a fraction, it should be rounded up to the next whole number.

(b) (i) the portion so obtained shall be thoroughly mixed together with a suitable instrument.

(ii) The composite sample so obtained shall be reduced to a suitable quantity, not being less than 1 kilogram in weight, by means of a mechanical divider or riffle, or alternatively, the reduction of the composite sample may be effected by placing the sample on a pliable surface and successively folding and unfolding that surface, the folding to be reversed occasionally, so as to discard part of the material.

(iii) When the material has been reduced to the required quantity, a sample shall then be taken in duplicate by transferring a quantity of the material equal to at least 500 grammes in weight into each of two suitable containers.

(c) (i) Each of the two containers shall be sealed and labelled in such a manner that they cannot be opened without breaking the seal.

(ii) The authorised officer taking the sample shall affix a distinguishing mark or number to the label so as to permit each

sample to be identified separately.
(d) One of the sealed containers shall be transmitted by the authorised officer concerned to the manufacturer of the liming material from which the sample was taken and the other sealed container shall be transmitted for analysis to the State Chemist as soon as possible.

REG 10

Certificate of result of analysis.
10. As regards any fertiliser to which these Regulations apply, the certificate referred to in section 3 (5) and 8 (4) (c) of the Act shall be in the form set out in—
(a) in case the fertiliser to which the certificate relates is a liming material, Part VII of the Schedule to these Regulations,
(b) in case such fertiliser is not a liming material, Part VIII of the said Schedule.

REG 11

Analysis of samples.
11. As regards any fertiliser to which these Regulations apply, the following manner of analysing samples is hereby prescribed for the purposes of sections 3 and 8 of the Act:
(a) in case the fertiliser to be analysed is a fertiliser which does not contain any of the following, namely, sodium, phosphorus soluble in mineral acids, cobalt, boron or any organic material, the manner specified in Regulation 4 of the Sampling and Analysis Regulations,
(b) in case such fertiliser is any other fertiliser to which these Regulations apply, the manner which would stand so specified if the Sampling and Analysis Regulations were modified in such one or more of the following ways as is appropriate in the particular circumstances:
(i) in case the fertiliser to be analysed contains organic material, the reference to Annex II in Regulation 4 of the Sampling and Analysis Regulations were a reference to that Annex (namely Annex II to the Commission Directive) as amended as follows, namely, there were inserted therein after paragraph 6 (d) of Method 1 the following:
"(e) Products Containing Organic Materials.
Only a representative part of the final sample need be ground and the final sample, or part of the final sample as the case may be, shall be ground so that the whole of it passes through a sieve with a mesh of 1·00mm.",
(ii) in case such fertiliser contains sodium, the Sampling and Analysis Regulations in addition required the amount of sodium so contained to be determined in accordance with the method specified in Part IX of the Schedule to these Regulations,
(iii) in case such fertiliser contains phosphorus soluble in mineral acids, the Sampling and Analysis Regulations in addition required the amount of such phosphorus so contained to be determined in accordance with the method specified in Part X of the said Schedule,
(iv) in case such fertiliser contains cobalt, the Sampling and

Analysis Regulations in addition required the amount of cobalt so contained to be determined in accordance with the method specified in Part XI of the said Schedule,

(v) in case such fertiliser contains boron, the Sampling and Analysis Regulations in addition required the amount of boron so contained to be determined in accordance with the method specified in Part XII of the said Schedule.

REG 12

Sampling on request.

12. (1) The period within which an application under section 3 of the Act regarding any fertiliser to which these Regulations apply may be made to the Minister shall be the period of twenty-eight days beginning on the day on which the fertiliser to which the application relates is delivered to the applicant.

(2) An application to the Minister referred to in paragraph (1) of this Regulation shall be made in writing and shall be accompanied by a fee of five pounds.

(3) In relation to any fertiliser to which these Regulations apply, the period for the purposes of section 3 (4) (a) of the Act shall be the period of forty-two days beginning on the date on which the fertiliser was delivered to the applicant.

(4) For the purpose of this Regulation, fertiliser consigned to a purchaser shall be deemed to be delivered to him only when it arrives at the place to which it is consigned (whether the consignment is by direction of the supplier or the purchaser).

REG 13

Limits of error.

13. (1) In relation to fertilisers other than liming materials which are fertilisers to which these Regulations apply the following limits of error are hereby prescribed for the purposes of section 2 of the Act, namely, any deviation which is a deviation referred to in paragraph (2) of this Regulation and which does not exceed whichever of the tolerances specified in Part III of the Schedule to these Regulations is appropriate in the particular case.

(2) The deviations referred to in paragraph (1) of this Regulation are deviations between—

(a) the declared value contained in a statement given as regards any non-EEC fertiliser, for the purposes of section 2 of the Act, of a nutrient contained in the fertiliser, and

(b) the value of such nutrient when measured on analysis in the manner prescribed by these Regulations.

(3) In relation to a liming material the limits of error for the purposes of section 2 of the Act shall be as follows:

ParticularsLimits of ErrorNeutralising Valueone-thirtieth (1/30) of the amount stated.Amount that will pass through a sieve with a mesh of 3·35mm.one-fortieth (1/40) of the amount stated.Amount that will pass through a sieve with a mesh of 150µm.one-twentieth (1/20) of the amount stated.Moisture contentNil.

REG 14

Amendment of Fertilisers, Feeding Stuffs and Mineral Mixtures Regulations, 1957.
14. (1) Subject to paragraph (2) of this Regulation, the Fertilisers, Feeding Stuffs and Mineral Mixtures Regulations, 1957 (S.I. No. 264 of 1957), insofar as they relate to fertilisers, are hereby revoked.
(2) Paragraph (1) of this Regulation, insofar as it affects fertilisers manufactured before the commencement of these Regulations, shall come into force on the 1st day of July, 1979.

SCHEDULE

Part I.
Data required or permitted to be used by these Regulations.
A. STRAIGHT FERTILISERS.
1. NITROGENOUS FERTILISERS.

Ref. No.Type designationData on method of production and essential ingredientsMinimum content of nutrients (percentage by weight); data on the expression of nutrients; other requirementsOther data on the type designationNutrient content to be declared forms and solubilities of the nutrients; other criteria(1)(2)(3)(4)(5) 1Calcium nitrate (nitrate of lime)Chemically obtained product containing calcium nitrate as its essential ingredient and possibly ammonium nitrate15% N
Nitrogen expressed as total nitrogen or as nitric and ammoniacal nitrogen. Maximum content of ammoniacal nitrogen:1·5%NTotal nitrogen. Additional optional particulars: Nitric nitrogen Ammoniacal nitrogen 2Calcium magnesium nitrate (nitrate of lime and magnesium)Chemically obtained product containing calcium nitrate and magnesium nitrate as essential ingredients13% N
Nitrogen expressed as nitric nitrogen. Minimum content magnesium in the form of water-soluble salts expressed as magnesium: 3% MgNitric nitrogen Water-soluble magnesium salts expressed as magnesium 3Sodium nitrate (nitrate of soda)Chemically obtained product containing sodium nitrate as its essential ingredient15% N
Nitrogen expressed as nitric nitrogenNitric nitrogen 4Chile nitrateProduct prepared from caliche, containing sodium nitrate as its essential ingredient15% N
Nitrogen expressed as nitric nitrogenNitric nitrogen 5Calcium CyanamideChemically obtained product containing calcium cyanamide as its essential ingredient, calcium oxide and possibly small quantities of ammonium salts and urea18% N
Nitrogen expressed as total nitrogen, at least 75 % of the nitrogen declared being bound in the form of cyanamideTotal nitrogen 6Nitrogenous calcium cyanamideChemically obtained product containing calcium cyanamide as its essential ingredient, and calcium oxide and possibly small quantities of ammonium salts and urea, plus added nitrate18% N
Nitrogen expressed as total nitrogen, at least 75 % of the non-nitric nitrogen declared being bound in the form of cyanamide. Nitric nitrogen content:

minimum: 1 % N
maximum: 3 % NTotal nitrogen Nitric nitrogen 7Sulphate of ammoniaChemically obtained product containing ammonium sulphate as its essential ingredient20% N
Nitrogen expressed as ammoniacal nitrogenAmmoniacal nitrogen 8Ammonium nitrate
or calcium ammonium nitrateChemically obtained product containing ammonium nitrate as its essential ingredient, which may contain fillers such as ground limestone, calcium sulphate, ground dolomite, magnesium sulphate, kieserite20% N
Nitrogen expressed as nitric nitrogen and ammoniacal nitrogen, each of these two forms of nitrogen accounting for about half the nitrogen presentThe designation "calcium ammonium nitrate" is exclusively reserved for a fertiliser containing only calcium carbonate (limestone) and/or magnesium carbonate and calcium carbonate (dolomite) in addition to ammonium nitrate. The minimum content of these carbonates must be 20% and their purity level at least 90%Total nitrogen Nitric nitrogen Ammoniacal nitrogen 9Ammonium sulphate-nitrateChemically obtained product containing as essential ingredients ammonium nitrate and ammonium sulphate25%N
Nitrogen expressed as ammoniacal and nitric nitrogen. Minimum nitric nitrogen content: 5 %Total nitrogen Ammoniacal nitrogen Nitric nitrogen10Magnesium sulpho-nitrateChemically obtained product containing ammonium nitrate, ammonium sulphate and magnesium sulphate as essential ingredients19% N
Nitrogen expressed as ammoniacal and nitric nitrogen. Minimum nitric nitrogen content: 6% N;
3 % Mg Water-soluble magnesium salts expressed as magnesiumTotal nitrogen, ammoniacal nitrogen. Nitric nitrogen, Water-soluble magnesium salts expressed as magnesium11Magnesium ammonium nitrateChemically obtained product containing ammonium nitrates and magnesium compound salts
(dolomite magnesium carbonate and/or magnesium sulphate) as essential ingredients19% N
Nitrogen expressed as ammoniacal nitrogen and nitric nitrogen. Minimum nitric nitrogen content: 6% N; 3% Mg. Magnesium expressed as total magnesiumTotal nitrogen, ammoniacal nitrogen. Nitric nitrogen, total magnesium12UreaChemically obtained product containing carbonyl diamide (carbamide) as its essential ingredient44% N
Total ureic nitrogen (including biuret). Maximum biuret content: 1·2%Total nitrogen, expressed as ureic nitrogen13Urea/ammonium NitrateChemically obtained product having urea and ammonium nitrate as its essential ingredients28% N
Nitrogen expressed as ureic, nitric and ammoniacal nitrogenTotal nitrogen
Ureic nitrogen
II. PHOSPHATIC FERTILISERS.
Where a particle size criterion is prescribed for the basic constituent materials of fertilisers sold in granular form it will be established by an appropriate analytical method.

14Basic Slag
—Thomas phosphates —Thomas slagProduct obtained in ironsmelting by treatment of the phosphorus melts and containing calcium silicophosphates as its essential ingredients5·2% P

Phosphorus soluble in mineral acids, at least 75 % of the declared
content of phosphorus being soluble in 2% citric acid; or 4·4% P
Phosphorus soluble in 2 % citric acid Particle size: at least 75 %
able to pass through a sieve with a mesh of 0·160 mm, at least
96% able to pass through a sieve with a mesh of 0·630
mm.Phosphorous soluble in 2% citric acid15Normal superphosphateProduct
obtained by reaction of ground mineral phosphate with sulphuric acid
and containing mono- calcium phosphate as an essential ingredient as
well as calcium sulphate7% P
Phosphorus soluble in neutral ammonium citrate, at least 93 % of
the declared content of P being water- soluble. Test sample: 1
gPhosphorus soluble in neutral ammonium citrate.
Water-soluble phosphorus16Concentrated super phosphateProduct obtained by
reaction of ground mineral phosphate with sulphuric acid and
phosphoric acid and containing monocalcium phosphate as an essential
ingredient as well as calcium sulphate11 % P
Phosphorus soluble in neutral ammonium citrate, at least 93 % of
the declared content of P being water- soluble. Test sample: 1
gPhosphorus soluble in neutral ammonium citrate.
Water-soluble phosphorus17Triple super- phosphateProduct obtained by
reaction of ground mineral phosphate with phosphoric acid and
containing mono- calcium phosphate as its essential ingredient16·5 %
P
Phosphorus soluble in neutral ammonium citrate, at least 93 % of
the declared content of P being water- soluble. Test sample: 3
gPhosphorus soluble in neutral ammonium citrate.
Water-soluble phosphorus18Partially solubilised rock phosphateProduct
obtained by partial solubilisation of ground rock phosphate with
sulphuric acid or phosphoric acid and containing as essential
ingredients monocalcium phosphate, tricalcium phosphate and calcium
sulphate8·5% P
Phosphorus soluble in mineral acids, at least 40% of the declared
content of P being water-soluble Particle size: Total phosphorus
(soluble in mineral acids).
Phosphorus soluble in water—at least 90% able to pass through a
sieve with a mesh of 0·160 mm —at least 98 % able to pass
through a sieve with a mesh of 0·630 mm.19Dicalcium phosphateProduct
obtained by precipitation of solubilised phosphoric acid from mineral
phosphates or bones, and containing dicalcium phosphate dihydrate as
its essential ingredient16·5% P
Phosphorus soluble in alkaline ammonium citrate (Petermann). Phosphorus
soluble in alkaline ammonium citrateParticle size:
—at least 90 % able to pass through a sieve with a mesh of 0·160
mm —at least 98 % able to pass through a sieve with a mesh of
0·630 mm20Calcined phosphateProduct obtained by heat treatment of
ground rock phosphate with alkaline compounds and silicic acid, and
containing alkaline calcium phosphate and calcium silicate as
essential ingredients11% P
Phosphorus soluble in alkaline ammonium citrate (Petermann). Phosphorus
soluble in alkaline ammonium citrateParticle size:
—at least 75 % able to pass through a sieve with a mesh of 0·160
mm —at least 96 % able to pass through a sieve with a mesh of
0·630 mm21Aluminum-calcium phosphateProduct obtained in amorphous form
by heat
treatment and grinding, containing aluminium and calcium phosphates as

essential ingredients13% P
Phosphorus soluble in
mineral acids, at least 75 % of the declared content of P being
soluble in alkaline ammonium citrate (Joulie).Total phosphorus (soluble
in mineral acids). Phosphorus soluble in alkaline ammonium
citrateParticle size:
—at least 90% able to pass through a sieve with a mesh of 0·160
mm —at least 98 % able to pass through a sieve with a mesh of
0·630 mm22Soft ground rock phosphateProduct obtained by grinding soft
mineral phosphates and containing tricalcium phosphate and calcium
carbonate as essential ingredients11% P
Phosphorus soluble in mineral acids, at least 55 % of the declared
content of P being soluble in 2% formic acid. Total phosphorus
(soluble in mineral acids).Phosphorus soluble in 2% formic acid.
Percentage by weight of material able to pass through a sieve with
a mesh of 0·063 mm.Particle size:
—at least 90% able to pass through a sieve with a mesh of 0·063
mm —at least 99% able to pass through a sieve with a mesh of
0·125 mm

III. POTASSIC FERTILISERS.

23KainitProduct obtained from
crude potassium salts8·5% K
Water-soluble potassium 3% Mg Magnesium in the form of water-soluble
salts,expressed as magnesiumUsual tradenames may be addedWater-soluble
potassium. Water-soluble magnesium salts expressed as
magnesium24Enriched kainit saltProduct obtained from crude potassium
salts enriched by blending with potassium chloride15% K
Water-soluble potassiumUsual trade names may be addedWater-soluble
potassium. Optional mention of the water-soluble magnesium content
where higher than 3% Mg25Muriate of potashProduct obtained from crude
potassium salts and containing potassium chloride as its essential
ingredient30·5 %K
Water-soluble potassiumUsual trade names may be addedWater-soluble
potassium26Potassium chloride containing magnesium saltProduct obtained
from crude potassium salts with added magnesium salts and containing
potassium chloride and magnesium salts as essential ingredients30·5 %
K
Water-soluble potassium 3% Mg Magnesium in the form of water-soluble
salts, expressed as magnesiumWater-soluble potassium. Water-soluble
magnesium salts expressed as magnesium27Sulphate of potashProduct
obtained chemically from potassium salts and containing potassium
sulphate as its essential ingredient39% K
Water-soluble potassium. Maximum chlorine content: 3% C1Water-soluble
potassium. Optional mention of the chlorine content where lower than
3% Cl28Sulphate of potash containing magnesium saltProduct obtained
chemically from potassium salts, possibly with addition of magnesium
salts, and containing potassium sulphate and magnesium
sulphate as essential ingredients18·5% K
Water-soluble potassium. 4·8% Mg Magnesium in the form of
water-soluble salts, expressed as magnesium. Maximum chlorine content:
3% ClUsual trade names may be addedWater-soluble potassium
Water-soluble magnesium salts expressed as magnesium. Optional mention
of the chlorine content where lower than 3% Cl

B. COMPOUND FERTILISER TYPES.

1. NPK FERTILISERS.

Type designationData on method of productionMinimum content of nutrients (percentage by weight)Forms, solubilities and nutrient content to be declared as specified in column 5: particle size.Data for identification of the fertilisers; other requirements.(1)(2)(3)(4)(5)TotalFor each of the nutrientsNPKNPKNPK FertiliserProduct obtained chemically or by blending, without addition of organic nutrients of animal or vegetable origin20%*
(N+P+K)3% N
2.18%P
4.15% K(1) Total nitrogen
(2) Nitric nitrogen
(3) Ammoniacal nitrogen
(4) Ureic nitrogen
(5) Cyanamide nitrogen(1) Water-soluble P
(2) P soluble in neutral ammonium citrate
(3) P soluble in neutral ammonium citrate and in water
(4) P soluble in mineral acids only
(5) P soluble in alkaline ammonium citrate (Petermann)
(6a) P soluble in mineral acids, of which at least 75% of the declared P content is soluble in 2% citric acid
(6b) P soluble in 2% citric acid
(7) P soluble in mineral acids, of which at least 75% of the declared P content is soluble in alkaline ammonium citrate (Joulie)Water- soluble K(1) Total nitrogen
(2) If any of the forms of nitrogen (2) to (5) amounts to at least 1% by weight, it must be declared1. An NPK fertiliser free from Thomas slag, calcined phosphate, aluminium-calcium phosphate, partially solubilized rock phosphate and soft ground rock phosphate must be declared in accordance with solubilities (1), (2) or (3):
—when the water-soluble P does not amount to ·87%, solubility (2) only shall be declared;
—when the water-soluble P is at least ·87% solubilite (3) shall be declared, and the water-soluble P content must be indicated (solubility (1)). The P content soluble in mineral acids only must not exceed ·87%.(1) Water-soluble potassium
(2) The indication 'low in chlorine' is linked .o a maximum content of 2% Cl.
(3) Chlorine content may be declared.(8) P soluble in mineral acids, of which at least 55% of the declared P content is soluble in 2% formic acidFor this type 1, the test sample for determining solubilities (2) and (3) shall be 1g. 2.(a) An NPK fertiliser containing soft ground rock phosphate or partially solubilised rock phosphate must be free from Thomas slag, calcined phosphate and aluminium- calcium phosphate. It shall be declared in accordance with solubilities (1), (3) and (4). This type of fertiliser must contain: Particle size of the basic phosphatic ingredients:—at least ·87% P soluble in mineral acids only (solubility (4)); Thomas slag: at least 75% able to pass through a sieve with a mesh of 0·160 mm.—at least 2·2% P soluble in water and neutral ammonium citrate (solubility (3)); Aluminium-calcium phosphate: at least 90% able to pass through a sieve with a mesh of 0·160 mm.—at least 1·1% water-soluble P (solubility (1)). Calcined phosphate; at least 75% able to pass through a sieve with a mesh of 0·160 mm.

Soft ground rock phosphate: at least 90% able to pass through a sieve with a mesh of 0·063 mm.

Partially solubilized rock phosphate; at least 90% able to pass through a sieve with a mesh of 0·160mmThis type of fertiliser must be marketed under the designation 'NPK fertiliser containing soft ground rock phosphate' or 'NPK fertiliser containing partially solubilised rock phosphate'. For this type 2(a), the test sample for determining solubility (3) shall be 3 g.2.(b) An NPK fertiliser containing aluminium-calcium phosphate must be free from Thomas Slag, calcined phosphate, soft ground rock phosphate and partially solubilized rock phosphate.It shall be declared in accordance with solubilities (1) and (7), the latter applying after deduction of the solubility in water. This type of fertiliser must contain:—at least ·87% of water-soluble P (solubility (1));—at least 2·2% of P according to solubility (7). This type of fertiliser must be marketed under the designation 'NPK fertiliser containing aluminium-calcium phosphate.3. In the case of the NPK fertilisers containing only one of the following types of phosphatic fertiliser:Thomas slag, calcined phosphate aluminium-calcium phosphate, soft ground rock phosphate, the type designation must be followed by an indication of the phosphate ingredientThe declaration of the solubility of the P must be given in accordance with the following solubilities:—for fertilisers based on Thomas slag: solubility (6b);—for fertilisers based on calcined phosphate: solubility (5);—for fertilisers based on aluminium calcium phosphate: solubility (7);—for fertilisers based on soft ground rock phosphate: solubility (8).
*20% (N+P+K) to be calculated by multiplying the nutrient contents N, P and K by 1, 2·29 and 1·2 respectively and adding the results of such multiplication.
B. COMPOUND FERTILISER TYPES.
2. NP FERTILISERS.

Type designationData on method of productionMinimum content of nutrients (percentage by weight)Forms, solubilities and nutrient content to be declared as specified in column 5; particle size.Data for identification of the fertilisers; other requirements.(1)(2)(3)(4)(5)TotalFor each of the nutrientsNPKNPK.NP FertiliserProduct obtained chemically or by blending without addition of organic nutrients of animal or vegetable origin.18% (N+P)*3% N 2·18 % P(1) Total Nitrogen(1) Water-soluble P(1) Total nitrogen1. An NP fertiliser free from Thomas slag, calcined phosphate, aluminium-calcium phosphate, partially solubilized rock phosphate and soft ground rock phosphate must be declared in accordance with solubilities (1), (2) or (3):(2) Nitric nitrogen(2) P soluble in neutral ammonium citrate(2) If any of the forms of nitrogen (2) to (5) amounts to at least 1% by weight it must be declared(3) Ammoniacal nitrogen(3) P soluble in neutral ammonium citrate and in water.(4) Ureic nitrogen(4) P soluble in mineral acids only(5) Cyanamide nitrogen(5) P soluble in alkaline ammonium citrate (Petermann)—when the water-soluble P does not amount to •87% solubility (2) only shall be declared:
—when the water-soluble P is at least ·87%, solubility (3) shall be

declared, and the water-soluble P content must be indicated (solubility (1)).(6a) P soluble in mineral acids of which at least 75% of the declared P content is soluble in 2% citric acid(6b) P soluble in 2% citric acidThe P content soluble in mineral acids only must not exceed ·87 %. For this type 1, the test sample for determining solubilities (2) and (3) shall be 1 g.2(a). An NP fertiliser containing soft ground rock phosphate or partially solubilized rock phosphate must be free from Thomas slag, calcined phosphate and aluminium-calcium phosphate.It shall be declared in accordance with solubilities (1), (3) and (4).(7) P soluble in mineral acids of which at least 75% of the declared P content is soluble in alkaline ammonium citrate (Joulie)This type of fertiliser must contain:

—at least ·87 % P soluble in mineral acids only (solubility (4));

—at least 2·2% P soluble in water and neutral ammonium citrate (solubility (3));

-at least ·11% water-soluble P (solubility (1)).(8) P soluble in mineral acids of which at least 55% of the declared P content is soluble in 2 % formic acidThis type of fertiliser must be marketed under the designation 'NP fertiliser containing soft ground rock phosphate' or 'NP fertiliser containing partially solubilized rock phosphate!For this type 2(a), the test sample for determining solubility (3) shall be 3 g.Particle size of the basic phosphatic ingredients:Thomas slag: at least 75% able to pass through a sieve with a mesh of 0·160 mm.2(b) An NP fertiliser containing alummium-calcium phosphate must be free from Thomas slag, calcined phosphate, soft ground rock phosphate and partially solubilized rock phosphate.

It shall be declared in accordance with solubilities (1) and (7), the latter applying after deduction of the solubility in water.Aluminium-calcium phosphate:at least 90% able to pass through a sieve with a mesh of 0·160mm.Calcined phosphate: at least 75% able to pass through a sieve with a mesh of 0·160 mm.Soft ground rock phosphate: at least 90 % able to pass through a sieve with a mesh of 0·063 mm.Partially solubilized rock phosphate:at least 90 % able to pass through a sieve with a mesh of 0·160 mm.This type of fertiliser must contain:—at least 87% water-soluble P (solubility (1));—at least 2·2% P according to solubility (7).This type of fertiliser must be marketed under the designation 'NP fertiliser containing aluminium-calcium phosphate'.3. In the case of NP fertilisers containing only one of the following types of phosphatic fertiliser: Thomas slag, calcined phosphate, aluminium-calcium phosphate, soft ground rock phosphate, the type designation must be followed by an indication of the phosphate ingredient.The declaration of the solubility of the P must be given in accordance with the following solubilities:—for fertilisers based on Thomas slag: solubility (6b);—for fertilisers based on calcined phosphate: solubility (5);—for fertilisers based on aluminium-calcium phosphate: solubility (7);—for fertilisers based on soft ground rock phosphate: solubilty (8).

*18% (N+P) to be calculated by multiplying the nutrient contents N and P by 1 and 2·29 respectively and adding the results of such multiplication.

B. COMPOUND FERTILISER TYPES.

3. NK FERTILISERS.

Type designationData on method of productionMinimum content of nutrients (percentage by weight)Forms, solubilities and nutrient content to be declared as specified in column 5; particle size.Data for identification of the fertilisers; other requirements(1)(2)(3)(4)(5)TotalFor each of theNPKNPKNK FertiliserProduct obtained chemically or by blending, without addition of organic nutrients of animal or vegetable origin18%*
(N+K)3% N
4·15% K(1) Total nitrogenWater- soluble K(1) Total nitrogen(1) Water-soluble potassium(2) Nitric nitrogen(2) If any of the forms of nitrogen (2) to (5) amounts to at least 1% by weight it must be declared(2) The indication 'low in chlorine' is linked to a maximum content of 2% CL
(3) Chlorine content may be declared(3) Ammonical nitrogen(4) Ureic nitrogen(5) Cyanamide nitrogen
*18% (N+K) to be calculated by multiplying the nutrient contents N and K by 1 and 1·2 respectively and adding the results of such multiplication.

B. COMPOUND FERTILISER TYPES.

4. PK FERTILISERS.

Type designationData on method of productionMinimum content of nutrients (percentage by weight)Forms, solubilities and nutrient content to be declared as specified in column 5; particle size.Data for identification of the fertilisers; other requirements(1)(2)(3)(4)(5)TotalFor each of the nutrientsNPKNPKPK FertiliserProduct obtained chemically or by blending, without addition of organic nutrients of animal or vegetable origin18%* (P+K)2·18% P
4·15% K(1) Water-soluble P
(2) P soluble in neutral ammonium citrateWater-
soluble K1. A PK fertiliser free from Thomas slag, calcined phosphate, aluminium-calcium phosphate, partially solubilized rock phosphate and soft ground rock phosphate must be declared in accordance with solubilities (1), (2) or (3):(1) Water-soluble potassium(3) P soluble in neutral ammonium citrate and in water(2) The indication 'low in chlorine' is linked to a maximum content of 2% Cl.(4) P soluble in mineral acids only(5) P soluble in alkaline ammonium citrate (Petermann)(3) Chlorine content may be declared(6a) P soluble in mineral acids of which at least 75 % of the declared P content is soluble in 2% citric acid.—when the water-soluble P does not amount to ·87 % solubility (2) only shall be declared;(6b) P soluble in 2% citric acid—when the water-soluble P is at least ·87 % solubility (3) shall be declared and the water-soluble P content must be indicated (solubility (1)).The P content soluble in mineral acids only must not exceed ·87 %
For this type 1, the test sample for determining solubilities (2) and (3) shall be 1 g.(7) P soluble in mineral acids of which at least 75 % of the declared P content is soluble in alkaline ammonium citrate.2(a) A PK fertiliser containing soft ground rock phosphate or partially solubilised rock phosphate must be free from Thomas slag, calcined phosphate and aluminium-calcium phosphate. It shall be declared in accordance with solubilities (1) (3) and (4).(8) P soluble in mineral acids, of which at least 55% of the declared P content is soluble in 2% formic acid.This type of

fertiliser must contain:—at least ·87% P soluble in mineral acids only (solubility (4));—at least 2·2% P soluble in water and neutral ammonium citrate (solubility (3));—at least 1·1% water-soluble P (solubility (1).This type of fertiliser must be marketed under the designation 'PK fertiliser containing soft ground rock phosphate' or 'PK fertiliser containing partially solubilized rock phosphate'.Particle size of the basic phosphatic ingredients:For this type 2(a), the test sample for determining solubility (3) shall be 3 g.Thomas slag:at least 75 % able to pass through a sieve with a mesh of 0·160 mm2(b). A PK fertiliser containing aluminium-calcium phosphate must be free from Thomas slag, calcined phosphate and partially solubilised rock phosphate.

It shall be declared in accordance with solubilities (1) and (7), the latter applying after deduction of the solubility in water.

This type of fertilisers must contain—at least ·87% water soluble P solubility (1));

—at least 2·2% P according to solubility (7).

This type of fertiliser must be marketed under the designation 'PK fertiliser containing aluminium-calcium phosphate'.Aluminium- calcium phosphate:at least 90% able to pass through a sieve with a mesh of 0·160 mmCalcined phospaleat least 75% able to pass through a sieve with a mesh of 0·160 mmSoft ground rock phosphate:at least 90% able to pass through a sieve with a mesh of 0·063mmPartially solubilized rock phosphate:at least 90% able to pass through a sieve with a mesh of 0·160 mm.3. In the case of PK fertilisers containing only one of the following types of phosphatic fertiliser: Thomas slag, calcined phosphate, aluminium-calcium phosphate, soft ground rock phosphate, the type designation must be followed by an indication of the phosphate ingredient.The declaration of the solubility of the P must be given in accordance with the following solubilities:—for fertilisers based on Thomas slag; solubility (6b);—for fertilisers based on calcined phosphate: solubility (5);—for fertilisers based on aluminium calcium phosphate: solubility (7);—for fertilisers based on soft ground rock phosphate: solubility (8).

*18% (P+K) to be calculated by multiplying the nutrient contents P and K by x·229 and 1·2 respectively and adding the results of such multiplication.

C. COMPOUND FERTILISERS CONTAINING ORGANIC MATERIAL

Type designationData on method of productionMinimum content of nutrients (percentage by weight)Forms, solubilities and nutrient contents (if any) to be declaredData for identification of the fertilisers; other requirements(1)(2)(3)(4)(5)NPKFertiliser containing Organic Material NPK CompoundProduct obtained chemically, naturally or by blending20%* (N+P+K) 3% N

2·2% P

4·15% K(1) Total nitrogen

(2) Ureic nitrogen

(3) Cyana mide nitrogen (forms to be declared only if they exceed one per cent)Phosphorus (P) soluble in water

Phorphorus (P) soluble in mineral acids onlyWater soluble potassium*20% (N+P+K) to be calculated by multiplying the nutrient contents N, P and K by multiplication. 1, 2·29 and 1·2 respectively and adding the results of such multiplication.Fertiliser containing Organic Material NP CompoundProduct obtained chemically, naturally or

by blending18%* (N+P)3% N
2·18% P(1) Total nitrogen
(2) Ureic nitrogen
(3) Cyanamide nitrogen (Forms to be declared only if they exceed
one per cent)Phosphorus (P) soluble in water Phosphorus (P) soluble
in mineral acids only*18% (N+P) to be calculated by multiplying the
nutrient contents N and P by 1 and 2·29 respectively and adding
the results of such multiplication.Fertilisers containing Organic
Material NK CompoundProduct obtained chemically, naturally or by
blending18%*
(N+K)3% N
4·15% K(1) Total nitrogen
(2) Ureic nitrogen
(3) Cyanamide nitrogen (forms to be declared only if they exceed
one per cent)Water soluble potassium*18% (N+K) to be calculated by
multiplying the nutrient contents N and K by 1 and 1·2 respectively
and adding the results of such multiplicationFertilisers containing
Organic Material PK CompoundProduct obtained chemically, naturally or
by blending18%*
(P+K)2·18% P 4·15% KPhosphorus (P) soluble in water
Phosphorus (P) soluble in mineral acids onlyWater soluble
potassium*18% (P+K) to be calculated by multiplying the nutrient
contents P and K by 2·29 and 1·2 respectively and adding the
results of such multiplicationFertilisers containing Organic Material
Blood MealProduct obtained chemically, naturally or by blending12%
NTotal Nitrogen

D. LOW NUTRIENT FERTILISERS

Type designationData on method of productionMinimum content of
nutrients (percentage by weight)Forms, solubilities and nutrient
contents (if any) to be declaredData for identification of the
fertilisers; other requirements(1)(2)(3)(4)(5)NPKLow Nutrient Fertiliser
NPK CompoundProduct obtained chemically, naturally or by blending1.
Total nitrogenPhosphorus (P) soluble in waterWater soluble potassium(2)
Ureic nitrogen
(3) Cyanamide nitrogen (Forms to be declared only if they exceed
one per cent)Phosphorus (P) soluble in mineral acids onlyLow Nutrient
Fertiliser NP CompoundProduct obtained chemically, naturally or by
blending(1) Total nitrogen
(2) Ureic nitrogenPhosphorus (P) soluble in water
Phosphorus (P) soluble in mineral acids only(3) Cyanamide nitrogen
(Forms to be declared only if they exceed one per cent)Low Nutrient
Fertiliser NK CompoundProduct obtained chemically, naturally or by
blending(1) Total nitrogen
(2) Ureic nitrogen
(3) Cyanamide nitrogen (Forms to be declared only if they exceed
one per cent)Water soluble potassiumLow Nutrient Fertiliser PK
CompoundProduct obtained chemically, naturally or by blendingPhosphorus
(P) soluble in water
Phosphorus (P) soluble in mineral acids onlyWater soluble potassiumLow
nutrient Fertiliser Urea TypeProduct obtained chemically, or by
blending(1) Total nitrogen
(2) Ureic nitrogen

PART II.

PARTICULARS REFERRED TO IN PARAGRAPHS (e) AND (h) OF REGULATION 2

(2)

1. Particulars and Identification Markings

(a) The designation of the type of fertiliser, in accordance with Part I of this Schedule and the numbers indicating the nutrient content which, for compound fertilisers, should be in the order laid down by the said designation.

(b) (i) The declared content in respect of each nutrient N, P, or K, or in case no such nutrient is contained in the fertiliser, a statement to that effect; and the declared content expressed as forms and/or solubilities where those are specified in the said Part I.

(ii) The nutrient content for straight and compound fertilisers must be given as a percentage by weight, as whole numbers or, where necessary, to one decimal place and for compound fertilisers in the following order: N., P. and K.

(iii) The forms and solubilities of the nutrients must also be expressed as a percentage by weight of fertiliser, except when the said Part I explicitly provides that the nutrient content shall be otherwise expressed.

(iv) Nutrients must be indicated both in words and by the appropriate chemical symbols (e.g. nitrogen (N), phosphorus (P), potassium (K), magnesium (Mg), boron (B), sodium (Na), cobalt (Co).

(c) Guaranteed net or gross weight. Also, if the gross weight is given, the tare weight must be indicated beside it.

(d) The name or trade name or trade mark and the address of the manufacturer of the fertiliser.

2. Labelling requirements

(a) The labels or markings printed on the package and giving the particulars mentioned in paragraph 1 of this Part must be placed in a conspicuous position. Attached labels must be held in place by whatever system is used for closing the package. If this system consists of a lead or other type of seal, the seal must bear the name or mark of the person referred to in pursuance of paragraph 1 (d) of this Part.

(b) The markings referred to in paragraph 1 of this Part must be and must remain indelible and clearly legible.

(c) Where accompanying documents containing the identification markings are used they must accompany the goods and be accessible for inspection purposes.

PART III.

TOLERANCES.

(a) The tolerances given in this Part are the permitted deviation of the measured value of a nutrient from its declared value.

(b) They are intended to accommodate variations in manufacturing, sampling and analysis.

(c) No tolerances are allowed in respect of the minimum and maximum contents specified in Annex 1 of the Commission Directive.

(d) Where no maximum is given there are no restrictions on an excess of nutrient above the declared amount.

(e) The tolerance allowed in respect of the declared nutrient contents in the various types of fertiliser are as follows:

A. Straight Fertilisers

absolute value in percentage by weight expressed as N, P, K, Mg, Cl.I. Nitrogenous fertilisers calcium nitrate .. ..0·4 calcium-magnesium nitrate .. ..0·4 sodium nitrate .. ..0·4 chile nitrate .. ..0·4 calcium cyanamide .. ..1·0 nitrogenous calcium cyanamide .. ..1·0 ammonium sulphate .. ..0·3 Ammonium nitrate or calcium ammonium nitrate: —up to and including 32% .. ..0·8 —more than 32% .. ..0·6 ammonium sulphate-nitrate .. ..0·8 magnesium sulphonitrate .. ..0·8 magnesium ammonium nitrate .. ..0·8 urea .. ..0·4II. Phosphatic fertilisers: Thomas slag: —declaration expressed as a range of 2% by weight0 —declaration expressed as a single number ..0·44Other phosphatic fertilisers:P solubility in: (Reference number of fertiliser in Part I of this Schedule) —mineral acid .. (18, 21, 22)0·35 —formic acid .. (7)0·35 —neutral ammonium citrate(15, 16, 17)0·35 —alkaline ammonium citrate(19, 20, 21)0·35 —water .. .. (15, 16, 18)0·40(17)0·57III. Potassic fertilisers: kainit .. ..1·25 enriched kainit salt .. ..0·83 muriate of potash —up to and including 45% .. ..0·83 —more than 45% .. ..0·415 potassium chloride containing: magnesium salt .. ..1·25 sulphate of potash .. ..0·415 sulphate of potash containing: magnesium salt .. ..1·25Other components magnesium .. ..0·54 chlorine .. ..0·2

B. Compound Fertilisers

I. Nutrient elements —N .. .. 1·1 —P .. .. 0·48 —K .. .. 0·91II. Total negative deviations from the declared value —binary fertilisers —NP, N + 2·29P .. .. 1·5 —NK N + 1·2K .. .. 1·5 —PK 2·29P + 1·2K .. ..1·5 ternary fertilisers —N + 2·29P + 1·2K .. .. 1·9

(f) The tolerance allowed in respect of the declared content for the various forms of nitrogen is one-tenth of the overall content of the nutrient concerned with a maximum of 2% by weight, provided that the overall content of that nutrient remains within the limits specified in Part 1 of this Schedule and the tolerances specified in paragraph (e) of this Part.

The tolerance allowed in respect of the declared solubilities of phosphorus is one-tenth of the overall content of the nutrient with a maximum of 0•87% by weight, provided that the overall content of the nutrient remains within the limits specified in Part I of this Schedule and the tolerances specified in paragraph (e) above.

(g) Where the presence of nutrients other than those provided for in paragraph (e) of this Part is declared, the tolerance allowed in respect of each declared nutrient shall be one half of the amount declared.

PART IV.

DETERMINATION OF MOISTURE CONTENT

A representative portion of the sample shall be weighed, with precautions against loss of moisture. It shall then be dried in a ventilated oven maintained at a temperature between 100°C and 105°C until 2 successive weighings after cooling in a desiccator, at intervals of not less than 3 hours in the oven, show an increment of loss of not more than 0·2 per cent of the original weight. The loss in weight, calculated as a percentage of the original weight, shall be taken to be the moisture content.

PART V.

DETERMINATION OF NEUTRALISING VALUE.

A representative portion of the sample shall be dried in an oven maintained at a temperature between 100°C and 105°C until 2 successive weighings after cooling in a desiccator at intervals of not less than 3 hours in the oven, show an increment of loss of not more than 0·1 per cent of the original weight. The material shall then be ground (if necessary) to a degree of fineness which permits the whole amount to pass through a sieve with a mesh of 150µm, and shall be placed in an air-tight container. A quantity of the material about 1 gram in weight, weighed to an accurancy of 1 milligram shall be transferred to an Erlenmeyer flask of about 250 millilitre capacity and 50 millilitres of 0·5 N hydrochloric acid shall be added. A small funnel shall be placed in the neck of the flask. The contents shall be heated, maintained at a gentle boiling for 5 minutes then cooled. The residual acid shall be determined by titration against 0·25 N sodium hydroxide using phenolphthalein as an indicator. The weight of calcium carbonate equivalent to the weight of hydrochloric acid which has been neutralised by the material shall be calculated and shall be expressed as a percentage of the weight of the material. This result shall be taken to be the neutralising value.

PART VI.

DETERMINATION OF FINENESS.

A quantity of the dried material, approximately 100 grams in weight, weighed to an accuracy of 0·1 gram, shall be sifted through a sieve with a mesh of 3·35 mm. Soft lumps may be broken down with the fingers but shall not be rubbed on the sieve. Any residue remaining on the sieve shall be weighed to an accuracy of 0·1 gram and the difference between its weight the weight of the dried material taken for the test shall be expressed as a percentage of the latter weight and shall be taken to indicate the extent to which the material passed through the sieve.

The material which passed through the 3·35 mm sieve shall be transferred to a sieve with a mesh of 150 µm and shall be sifted continuously for 10 minutes, with occasional tapping of the sides of the sieve. The material which has then passed through the 150 µm sieve shall be weighed to an accuracy of 0·1 gram and the result shall be expressed as a percentage of the weight of the dried material taken for the test and shall be taken to indicate the percentage of the material which passed through the 150 µm sieve.

PART VII.

MARKETING OF NON-EEC FERTILISERS REGULATIONS, 1978

Reference No. ....Certificate of result of
analysis of a liming materialSample of
....
marked ....
received by the Analyst
on...
....
from...
....
which was taken at the premises

of...
....
....
....
on .... 19 . This
is to certify that the above-mentioned sample, which was duly
labelled and sealed, in accordance with the above Regulations has
been analysed by
....
....
under the direction of the State Chemist*/Assistant State Chemist**,
and that the result of the analysis is as follows:
per centNeutralising value expressed in terms of
calcium carbonate
....Fineness:
(1) Amount found to pass through a 3·35 mm
sieve... (2) Amount found to
pass through a 150 µm sieve..
(3) Moisture
....
*The particulars declared are correct, subject to the prescribed
limits of error.
**The particulars declared are incorrect in the following respects:
This certificate is given under section 3 (5)*/8 (4) (c)* of the
Fertilisers, Feeding Stuffs and Mineral Mixtures Act, 1955, as
applied by the above Regulations.

Date
....Signed
....State
Chemist*/Assistant
State Chemist*
*Delete as appropriate.

PART VIII.

MARKETING OF NON-EEC FERTILISERS REGULATIONS, 1978.

Certificate of Result of Analysis of a Fertiliser other than a
liming materialSample of
.... marked
....received
by the Analyst on .... from
....which
was taken at the premises
of...
.....,
19 .
This is to certify that the above mentioned sample which was duly
fastened and sealed, in accordance with the above Regulations has
been analysed by
.... under the
direction of the State Chemist*/ the Assistant State Chemist* and
that the result of the analysis is as follows:

Per centTotal Nitrogen (N) .. ..
....................................Ammoniacal Nitrogen (N) .. .. ..

.. ..Nitric Nitrogen (N) .. .. ..
.. ..Ureic Nitrogen (N) .. .. ..
.. ..Cyanamide Nitrogen (N) .. ..
.. ..Phosphorus (P) soluble in
neutral Ammonium Citrate and in
water.....................................Phosphorus (P) soluble in water
.. ..Phosphorus (P) soluble
in neutral ammonium citrate
....Phosphorus (P) soluble in mineral
acids only .. ..Phosphorus (P)
soluble in Alkaline Ammonium Citrate. Petermann) .. ..
.. ..Phosphorus (P) soluble in 2%
citric acid .. ..Phosphorus
soluble in alkaline ammonium citrate (Joulie)
....Phosphorus soluble in alkaline
ammonium citrate (Joulie) as a percentage of the declared phosphorus
content .. ..Phosphorus soluble in
2% formic acid .. ..Phosphorus
soluble in 2% formic acid as a percentage of the declared
phosphorus content .. ..
.....................................Potassium (K) soluble in water ..
.. ..Water soluble Magnesium
(Mg) salts expressed as Magnesium
....Total Magnesium (Mg) .. ..
.. ..Chlorine (Cl) .. ..
.. ..Other Nutrients .. ..
.. ..Amount found to pass through a
0.160 mm sieve .. ..Amount found
to pass through a 0.063 mm sieve ..
....
On comparison of the results of the analysis with the particulars
accompanying the sample it appears that the particulars furnished—
*are correct, subject to the prescribed tolerance limits
*are not correct subject to the prescribed tolerance limits, in the
following respects:
This Certificate is given under section 3(5)*/8(4)(c)* of the
Fertilisers, Feeding Stuffs and Mineral Mixtures Act, 1955, as
applied by the above Regulations.

Date ....Signed
....State
Chemist*/Assistant State Chemist*
*Delete as appropriate.

PART IX

METHOD OF DETERMINING AMOUNT OF SODIUM REFERRED TO IN REGULATION 11

1. Scope

To determine the content of sodium in fertilisers.

2. Field of Application.

All fertilisers listed in Part 1 of the Schedule to these Regulations which contain sodium.

3. Principle.

The sample is brought into solution after the destruction of the organic matter, if any. The sodium content of the solution is determined by flame photometry in the presence of Caesium chloride and aluminium nitrate. The addition of these substances largely eliminates interference from disturbing elements.

4. Reagents.

Water means distilled or deionised water.

4.1 Hydrochloric acid, d:1.12

4.2 Calcium chloride, for analysis.

4.3 Aluminum nitrate, Al (No3)3.9H20, for analysis.

4.4 Sodium chloride, anhydrous, for analysis.

4.5 Loading agent: dissolve in water 50g of a caesium chloride and 250g of aluminium nitrate, make up to 1 litre with water and mix. Store in plastic bottles.

4.6 Standard solution of sodium: dissolve in water 2.542g of sodium chloride, add 5 ml of hydrochloric acid (4.1), make up to 1 litre with water and mix. Store in plastic bottles. 1 ml of this solution contains 1.00 mg of sodium.

5. Apparatus.

5.1 Platinum, silica or porcelain crucibles for ashing, provided if necessary with lids.

5.2 Electric muffle-furnace with thermostat.

5.3 Flame photometer.

6. Preparation of the Sample.

See Method 1 of Annex II to the Commission Directive.

7. Procedure.

7.1 (a) In the absence of organic matter

Weigh to the nearest mg 1-10 g of sample depending on its sodium content. Place in a 500 ml volumetric flask and add 250-300 ml water. Proceed as in 7.2.

7.1 (b) In the presence of organic matter

Weigh to the nearest mg 10 g of sample and place in a crucible (5.1) and ash at 450° for 3 hours. Cool, and transfer the ash quantitatively to a 500 ml volumetric flask using 250-300 ml water. Proceed as in 7.2.

7.2 Dissolution and determination

Add 50 ml of hydrochloric acid (4.1). When all release of carbon dixoide has ceased, heat the solution and keep at a temperature of about 90°C for 2 hours, stirring occasionally. After cooling to room temperature, make up to the mark with water, shake and filter. Transfer to a 100 ml volumetric flask and aliquot part of the filtrate containing a maximum of 1.0 mg of sodium, add 10.0 ml of loading agent (4.5), make up to the mark with water and mix. In the case of higher levels of sodium, dilute the solution to be analysed in suitable proportions before adding the loading agent. Measure by flame photometry at a wavelength of 589 nm. Calculate the result by means of a calibration curve.

The table below is given as a guide for a sample of 10g.

Assumed sodium content of the sample (%Na)Dilution factorAliquot part in ml of the solutionUp to 0.1 .. —500.1 to 0.5 .. —100.5 to 1.0 .. —51.0 to 5.0 .. 1 : 10105.0 to 10.0 .. 1 : 10510.0 to 20.0 .. 1 : 205

7.3 Calibration curve

Place exactly 10 ml of the standard solution (4.6) in a 250 ml graduated flask, make up to the mark with water and mix. Place in 100 ml graduated flasks exactly 5, 10, 15, 20 and 25 ml of this solution, corresponding respectively to amounts of sodium of 0.2, 0.4, 0.6, 0.8 and 1.0 mg. Complete the series with a blank flask containing no standard solution. Add 10 ml of loading agent (4.5) to each flask, make up to the mark with water and mix. Carry out the measurements as indicated in 7.2. The calibration curve is generally linear up to a sodium concentration of 1 mg in 100 ml of solution.

8. Calculation of results

Express the result as a percentage of the sample.

9. Observations.

For products containing more than 4% of sodium, it is preferable to ash the substance for 2 hours in a crucible with a lid. After cooling, add water, bring the ash into suspension by means of a platinum wire, dry and ash again for 2 hours in the crucible with a lid.

PART X.

METHOD OF DETERMINING AMOUNT OF PHOSPHORUS SOLUBLE IN MINERAL ACIDS REFERRED TO IN REGULATION 11

1. Scope.

To determine the content of phosphorus soluble in mineral acids.

2. Field of Application.

All fertilisers listed in Part 1 of the schedule to these Regulations which contain phosphorus.

3. Principle.

The organic matter, if any, is destroyed and the phosphorus is extracted with a mixture of nitric and sulphuric acids.

4. Reagents.

Water means distilled or deionised water.

4.1 Sulphuric acid (d20 = 1.84).

4.2 Nitric acid (d20 = 1.42).

4.3 Calcium carbonate, for analysis.

5. Apparatus.

5.1 Kjeldahl flask capacity about 500 ml.

5.2 Silica or porcelain ashing crucible.

5.3 Muffle furnace set at 550°C ± 10°C.

6. Preparation of the Sample.

See Method 1 of Annex II to the Commission Directive.

7. Procedure.

7.1 (a) In the absence of organic matter.

Weigh, to the nearest 0.001 g, 2.5 g of the prepared sample and place it in a dry Kjeldahl flask (5.1) and proceed as in 7.2.

7.1 (b) In the presence of organic matter.

Weigh to the nearest 0.001 g, 2.5 g of the prepared sample into an ashing crucible (5.2). Mix with 1g of calcium carbonate (4.3)and ash in a muffle (5.3) until a white or grey ash is obtained (a small quantity of carbon causes no interference). Transfer the ash to the Kjeldahl flask (5.1) and proceed as in 7.2.

7.2 Extraction.

Add 15 ml of water and stir so as to suspend the substance. Add 20 ml of nitric acid (4.2) and carefully add 30 ml of sulphuric acid (4.1).

When the initial violent reaction has ceased, slowly bring the contents of the flask to boiling and boil for 30 minutes. Allow to cool and then carefully add with mixing above 150 ml of water. Continue boiling for 15 minutes.

Cool completely and transfer the liquid quantitatively to a 500 ml graduated flask. Make up to volume, mix and filter through a dry pleated filter, free from phosphates, discarding the first portion of the filtrate.

7.3 Determination.

The determination of the phosphorus will be carried out by Method 3.2 of the Commission Directive on an aliquot part of the solution thus obtained.

PART XI.

METHOD OF DETERMINING AMOUNT OF COBALT REFERRED TO IN REGULATION 11.

1. Scope.

To determine the content of cobalt in fertilisers.

2. Field of Application.

All fertilisers listed in Part I of the schedule to these Regulations which contain cobalt.

3. Principle.

The sample is brought into solution after destruction of the organic matter, if any. The cobalt is determined spectrophotometrically after the formation of a coloured complex with 2-nitroso-1-naphthol.

4. Reagents.

Water means distilled or deionised water.

4.1 (a) Ammonium cobaltous sulphate, (NHPT:7>4) 2(Co(SO4) 6H20, (stock cobalt solution)—Dissolve 0 670 g ammonium cobaltous sulphate for analysis in water and dilute to 100 ml at 20°C.

4.1 (b) Ammonium cobaltous sulphate (standard cobalt solution)—Dilute 1 ml stock solution (4.1 (a)) to 1,000 ml with water at 20°C immediately before use. 1 ml = 1 g cobalt.

4.2 Hydrochloric acid, 50 per cent v/v—Dilute 50 ml concentrated hydrochloric acid (d = 1.18) with water to 100 ml.

4.3 Hydrochloric acid, 2N.

4.4 Hydrogen peroxide solution, 3 per cent w/v (10 volumes).

4.5 Nitric acid, 30 per cent v/v—Dilute 30 ml concentrated nitric acid (d = 1.42) with water to 100 ml.

4.6 2-Nitroso-1-naphthol reagent—Dissolve 1 g 2-nitroso-l-naphthol in 100 ml glacial acetic acid, and add 1 g activated carbon. Shake the solution before use, and filter the required amount.

4.7 Sodium citrate solution—Dissolve 40 g sodium citrate (for analysis) in water and dilute to 100 ml.

4.8 Sodium hydroxide 2N.

4.9 Sodium sulphate, anhydrous, for analysis.

4.10 Toluene, redistilled.

5. Apparatus.

5.1 Silica basin.

5.2 Muffle furnace.

5.3 PH Meter.

5.4 Spectrophotometer with 10 mm cells.

6. Preparation of the Sample.

See method 1 of Annex II to the Commission Directive.

7. Procedure.

7.1 (a) In the absence of organic matter.

Weigh to the nearest mg about 5 g of the sample and transfer into a beaker, add 10 ml 50 per cent v/v hydrochloric acid (4.2) and evaporate to dryness on a water bath. Extract the soluble salts with three successive 10 ml portions of boiling 2 N hydrochloric acid (4.3) decanting the solution each time through the same Whatman No. 541 (or equivalent) filter paper into a 50 ml volumetric flask. Dilute the combined extracts to the mark with water washing the filter paper in the process.

7.1 (b) In the presence of organic matter.

Weigh to the nearest mg about 5 g of the sample, and transfer into a silica basin, cover with a silica clock glass, and place in a cool muffle furnace. Raise the temperature to 450 10°C and allow to ash overnight; a slow movement of air through the furnace during the initial stages of ashing is desirable. When all the organic matter has been destroyed, cool, add 10 ml 50 per cent v/v hydrochloric acid (4.2) and evaporate to dryness on a water bath. Extract the soluble salts from the residue with two successive 10 ml portions of boiling 2 N hydrochloric acid (4·3) decanting the solution each time through the same Whatman No. 541 (or equivalent) filter paper into a 50 ml volumetric flask. Then add 5 ml 50 per cent v/v hydrochloric acid (4·2) and about 5 ml 30 per cent v/v nitric acid (4·5) to the residue in the basin, and take the mixture to dryness on a hot-plate at low heat. Finally add a further 10 ml of boiling 2 N hydrochloric acid (4·3) to the residue and filter the solution through the same paper into the flask. Dilute the combined extracts to the mark with distilled water, washing the filter paper in the process.

7.2 Determination.

Transfer a suitable aliquot of the solution prepared in accordance with 7.1 (a) and 7.1 (b) to a beaker, add 15 ml sodium citrate solution (4.7) and dilute to approximately 50 ml with water. Adjust the pH to between 3 and 4 by the addition of 2 N hydrochloric acid (4.3) and 2 N sodium hydroxide (4.8), using pH test paper (a precipitate of ferric hydroxide may form, but this can be dissolved by heating the solution), and cool to room temperature. Add 10 ml 3 per cent hydrogen peroxide solution (4.4) and, after 5 minutes, 1 ml of 2-nitroso-1-naphthol reagent (4.6), heat to about 90°C, and then allow to stand for 30 minutes at room temperature.

Transfer the solution to a separating funnel, add exactly 10 ml toluene (4.10), shake vigorously for 2 minutes, and discard the lower aqueous phase. To the toluene extract add 20 ml 2 N hydrochloric acid (4.3), shake for 1 minute, and run off and discard the lower aqueous phase. Add 20 ml 2 N sodium hydroxide (4.8) shake for 1 minute, and again run off and discard the lower aqueous phase. Repeat the treatment of the toluene extract with a further 20 ml 2 N sodium hydroxide (4.8). Finally run off the toluene solution through a little anhydrous sodium sulphate and cotton wool plus into a glass-stoppered tube.

Carry out a blank determination by repeating the procedure, omitting only the sample.

Measure the extinctions of the test and blank solutions at a wavelength of 367 nm, using a 1 cm cell and toluene in the comparison cell. Read the number of micrograms of cobalt equivalent to the observed extinctions of the test and blank solutions from a previously prepared calibration graph. Determine the amount of cobalt in the sample from the difference between the test and blank solutions.

7.3 Calibration graph

Measure amounts of standard cobalt solution corresponding to 0, 3, 6, 9, 12, 15 g of cobalt (4.1 (b)) into a series of beakers and proceed as described in 7.2 above commencing at "add 15 ml sodium citrate solution . . .". Measure the extinctions of the solutions, and construct a graph relating the extinctions to the number of micrograms of cobalt.

8. Expression of Results.

Express the result as a percentage of the sample.

PART XII.

METHOD OF DETERMINING AMOUNT OF BORON REFERRED TO IN REGULATION 11.

1. Scope.

To determine the content of boron in fertilisers.

2. Field of Application.

All fertilisers listed in Part I of the schedule to these Regulations which contain boron.

3. Principle.

The boron is brought into solution and the boron is determined spectrophotometrically after the formation of a complex with azomethine-H.

4. Reagents.

Water means distilled or deionised water.

4.1 Glacial acetic acid.

4.2 Buffer Masking Agent: dissolve 250 g ammonium acetate, 25 g of ethylene diamine-tetra-acetic acid, tetra sodium salt, and 10 g of nitrilotriacetic acid disodium salt in 400 ml water and slowly add 125 ml of acetic acid.

4.3 Azomethine-H; dissolve 0·9 g of azomethine-H and 2 g ascorbic acid in 10 ml water, with gentle heating on a water bath and make up to 100 ml with water.

4.4 (a) Boron stock solution; (100 g Boron per ml) dissolve 0·5716 g boric acid in water and make up to 1 litre.

4.4 (b) Standard solution (10 g Boron per ml). Take 10 ml of stock solution (4.4 (a)) and dilute to 100 ml.

4.4 (c) Working standard solution (1 g Boron per ml). Take 10 ml of standard solution (4.4 (b)) and dilute to 100 ml.

5. Apparatus.

5.1 Shaker.

5.2 Spectrophotometer with 10 mm cells.

6. Preparation of sample.

See method 1 of Annex II to the Commission Directive.

7. Procedure.

7.1 Determination.

Weigh to the nearest mg 1·0 g of sample (for samples containing less than 0·2% B, take a larger portion) and place in a 1 litre volumetric flask. Add approximately 300 ml of water, cover with a clock glass and boil for 15 minutes. Cool, transfer the contents to a 1 litre volumetric flask, make up to the mark with water and filter descarding the first 20 mls of the filtrate.

Take an aliquot (not exceeding 4 ml and containing about 1 g of Boron) and place in a test tube. Adjust the volume to 4·0 ml with water and add 1·0 ml of buffer masking agent (4·2) followed by 1·0 ml of azomethine-H (4.3). Mix contents immediately and then stand for one hour. Measure the optical density of the resulting solution in 10 mm cells in a spectrophotometer at 430 nm using water in the reference cell. Determine the quantity of boron present in the sample by reference to a calibration curve.

7.2 Calibration Curve.

Place 0·00, 0·25, 0·5, 1·0, 2·0, 4·0 mls of working standard solution in a series of tubes and adjust the volume to 4·0 ml with water. Add 1·0 ml of Buffer Masking Agent (4·2) followed by 1·0 ml of azomethine-H (4.3). Mix contents immediately and stand for 1 hour. Measure the optical density in a spectrophotometer at 430 nm using water in the reference cell. Plot the calibration curve with the optical density values as ordinates and the corresponding quantities of boron as abscissae making allowances for the blank value.

8. Expression of Results.

Express the results as a percentage of the sample.

GIVEN under my Official Seal, this 1st day of September, 1978.

JAMES GIBBONS,
Minister for Agriculture.

EXPLANATORY NOTE.

The Regulations cover all fertilisers other than those designated "EEC fertiliser".

They:—

— lay down similar quality, packaging and labelling standards for straight and compound NPK solid fertilisers not designated "EEC fertiliser" to those laid down in the European Communities (Marketing of Fertilisers) Regulations, 1978 (S.I. No. 13 of 1978) for "EEC fertilisers";

— also provide for quality, packaging and labelling standards for:

(a) liquid fertilisers,

(b) fertilisers containing any of the nutrients boron, cobalt, phosphorus soluble in mineral acids or sodium,

(c) fertilisers containing organic materials,

(d) liming materials including ground limestone;

— lay down official methods of sampling and analysis for these fertilisers;

— revoke the Fertilisers, Feeding Stuffs and Mineral Mixtures Regulations, 1957 (S.I. No. 264 of 1957) insofar as they relate to fertilisers.