

II

(Non-legislative acts)

REGULATIONS

COMMISSION REGULATION (EU) No 463/2013

of 17 May 2013

amending Regulation (EC) No 2003/2003 of the European Parliament and of the Council relating to fertilisers for the purposes of adapting Annexes I, II and IV thereto to technical progress

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers ⁽¹⁾, and in particular Article 31(1) and (3) thereof,

Whereas:

- (1) The word 'kainit' has been used in Table A.3 of Annex I to Regulation (EC) No 2003/2003 as the fertiliser type designation for crude potassium salt. The word kainit has now come to be associated with only one specific crude potassium salt leading to a potential restriction of trade for manufacturers wishing to market other sources of potassium salts. In order to counter that restriction and thus facilitate access to a broader range of potassium salts for farmers across the Member States, a more generic type designation for those entries should be used for that fertiliser type, and the references to kainit should be adapted accordingly. A transitional period should be granted to producers of crude potassium salts to adapt the labelling to the new rules.
- (2) Lignosulphonic acid is a complex material obtained from different sources of wood. As many different grades of quality are commercially available, it is important to adapt to technical progress the quality requirements which the products must comply with in order to be placed on the market as an EC fertiliser.
- (3) Liming materials, also known as lime fertilisers, reduce soil acidity and, in doing so, can also provide the

nutrients magnesium or calcium or both. Manufacturers of liming materials face a diversity of national rules leading to a distortion of the internal market. Liming materials should therefore be added to the fertiliser types described in Annex I to Regulation (EC) No 2003/2003 in order that they may circulate freely within the internal market. Furthermore, the European Committee for Standardisation (CEN) has developed EN standards for the methods of analysis of liming materials. In order to make compliance with those standards mandatory, they should be included in Annex IV to Regulation (EC) No 2003/2003 laying down the methods of sampling and analysis.

- (4) A transitional period should be granted to ensure that producers of liming materials are given time to adapt to the new EN Standards.
- (5) Annex II to Regulation (EC) No 2003/2003 lays down the tolerances with regard to the declared nutrient content. Annex II should be amended to include tolerances for liming materials.
- (6) Regulation (EC) No 2003/2003 requires the control of EC fertilisers in accordance with the methods of sampling and analysis that are laid down in Annex IV thereto. However, some of those methods are not internationally recognised and should be replaced by EN standards recently developed by the European Committee for Standardisation.
- (7) Regulation (EC) No 2003/2003 should therefore be amended accordingly.
- (8) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 32 of Regulation (EC) No 2003/2003,

⁽¹⁾ OJ L 304, 21.11.2003, p. 1.

HAS ADOPTED THIS REGULATION:

Article 1
Amendments

1. Annex I to Regulation (EC) No 2003/2003 is amended in accordance with Annex I to this Regulation.
2. Annex II to Regulation (EC) No 2003/2003 is amended in accordance with Annex II to this Regulation.
3. Annex IV to Regulation (EC) No 2003/2003 is amended in accordance with Annex III to this Regulation.

Article 2

Transitional provisions

By way of derogation from the second paragraph of Article 3, manufacturers may apply the provisions in Annex I, point (1) before 7 December 2014.

Article 3

Entry into force

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.
2. Annex I, point (1) shall apply from 7 December 2014.
3. Annex I, point (3), Annex II, point (2) and Annex III, point (4) shall apply from 7 June 2014.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 17 May 2013.

For the Commission
The President
José Manuel BARROSO

ANNEX I

Annex I to Regulation (EC) No 2003/2003 is amended as follows:

(1) In Section A.3, entries 1 and 2 in the table are replaced by the following:

1	Crude potassium salt	Product obtained from crude potassium salts	10 % K ₂ O Potassium expressed as water-soluble K ₂ O 5 % MgO Magnesium in the form of water-soluble salts, expressed as magnesium oxide	Usual trade names may be added	Water-soluble potassium oxide Water-soluble magnesium oxide
2	Enriched crude potassium salt	Product obtained from crude potassium salts enriched by blending with potassium chloride	18 % K ₂ O Potassium expressed as water-soluble K ₂ O	Usual trade names may be added	Water-soluble potassium oxide Optional mention of the water-soluble magnesium oxide content where higher than 5 % MgO'

(2) In Section E.3.2, the table is replaced by the following:

No	Designation	Alternative designation	Chemical formula	CAS number of the acid (*)
1	Lignosulfonic acid	LS	No chemical formula available	8062-15-5 (**)

(*) For information only.

(**) For quality reasons, the relative phenolic hydroxyl content and the relative organic sulphur content as measured by EN 16109 must exceed 1,5 % and 4,5 % respectively.'

(3) The following Section G is added:

'G. Liming materials

The words "LIMING MATERIAL" shall be added after the term "EC FERTILISER".

All the properties mentioned in the tables of Sections G.1 to G.5 refer to the product as supplied unless otherwise specified.

Granulated liming materials which are produced by aggregating smaller primary particles must break down when stirred in water into particles with fineness distributions as specified in the type descriptions, and as measured using Method 14.9 "Determination of the breakdown of granules".

G.1. Natural Limes

No	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared Forms and solubilities of the nutrients Other criteria to be declared
1	2	3	4	5	6
1(a)	Limestone — standard quality	Product containing as its essential ingredient calcium carbonate, obtained by grinding of natural deposits of limestone.	Minimum neutralising value: 42 Fineness determined by wet sieving: — at least 97 % to pass through a 3,15 mm sieve; — at least 80 % to pass through a 1 mm sieve; and — at least 50 % to pass through a 0,5 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium (optional) Reactivity and method of determination (optional) Moisture (optional) Fineness determined by wet sieving (optional)
1(b)	Limestone — fine quality		Minimum neutralising value: 50 Fineness determined by wet sieving: — at least 97 % to pass through a 2 mm sieve; — at least 80 % to pass through a 1 mm sieve; — at least 50 % to pass through a 0,315 mm sieve; and — at least 30 % to pass through a 0,1 mm sieve.		
2(a)	Magnesian limestone — standard quality	Product containing as its essential ingredients calcium carbonate and magnesium carbonate, obtained by grinding of natural deposits of magnesian limestone.	Minimum neutralising value: 45 Total magnesium: 3 % MgO Fineness determined by wet sieving: — at least 97 % to pass through a 3,15 mm sieve; — at least 80 % to pass through a 1 mm sieve; and — at least 50 % to pass through a 0,5 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium Reactivity and method of determination (optional) Moisture (optional) Fineness determined by wet sieving (optional) Soil incubation results (optional)
2(b)	Magnesian limestone — fine quality		Minimum neutralising value: 52 Total magnesium: 3 % MgO Fineness determined by wet sieving: — at least 97 % to pass through a 2 mm sieve;		

1	2	3	4	5	6
			<ul style="list-style-type: none"> — at least 80 % to pass through a 1 mm sieve; — at least 50 % to pass through a 0,315 mm sieve; and — at least 30 % to pass through a 0,1 mm sieve. 		
3(a)	Dolomitic limestone — standard quality	Product containing as its essential ingredients calcium carbonate and magnesium carbonate, obtained by grinding of natural deposits of dolomite.	Minimum neutralising value: 48 Total magnesium: 12 % MgO Fineness determined by wet sieving: <ul style="list-style-type: none"> — at least 97 % to pass through a 3,15 mm sieve; — at least 80 % to pass through a 1 mm sieve; and — at least 50 % to pass through a 0,5 mm sieve. 	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium Reactivity and method of determination (optional) Moisture (optional) Fineness determined by wet sieving (optional) Soil incubation results (optional)
3(b)	Dolomitic limestone — fine quality		Minimum neutralising value: 54 Total magnesium: 12 % MgO Fineness determined by wet sieving: <ul style="list-style-type: none"> — at least 97 % to pass through a 2 mm sieve; — at least 80 % to pass through a 1 mm sieve; — at least 50 % to pass through a 0,315 mm sieve; and — at least 30 % to pass through a 0,1 mm sieve. 	Usual trade names or alternative names may be added.	
4(a)	Marine limestone — standard quality	Product containing as its essential ingredient calcium carbonate, obtained by grinding of natural deposits of limestone of marine origin.	Minimum neutralising value: 30 Fineness determined by wet sieving: <ul style="list-style-type: none"> — at least 97 % to pass through a 3,15 mm sieve; and — at least 80 % to pass through a 1 mm sieve. 	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium (optional) Reactivity and method of determination (optional) Moisture (optional)
4(b)	Marine limestone — fine quality		Minimum neutralising value: 40 Fineness determined by wet sieving: <ul style="list-style-type: none"> — at least 97 % to pass through a 2 mm sieve; and — at least 80 % to pass through a 1 mm sieve. 	Usual trade names or alternative names may be added.	Fineness determined by wet sieving (optional) Soil incubation results (optional)

1	2	3	4	5	6
5(a)	Chalk — standard quality	Product containing as its essential ingredient calcium carbonate, obtained by grinding of natural deposits of chalk.	<p>Fineness determined by wet sieving after disintegration in water:</p> <ul style="list-style-type: none"> — at least 90 % to pass through a 3,15 mm sieve; — at least 70 % to pass through a 2 mm sieve; and — at least 40 % to pass through a 0,315 mm sieve. <p>Reactivity of fraction 1-2 mm (obtained by dry sieving) at least 40 % in citric acid</p> <p>Minimum neutralising value: 42</p> <p>Fineness determined by wet sieving:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 25 mm sieve; and — at least 30 % to pass through a 2 mm sieve. 	Usual trade names or alternative names may be added.	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium (optional)</p> <p>Reactivity and method of determination (optional)</p> <p>Moisture (optional)</p> <p>Fineness determined by wet sieving (optional)</p> <p>Soil incubation results (optional)</p>
5(b)	Chalk — fine quality		<p>Fineness determined by wet sieving after disintegration in water:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 3,15 mm sieve; — at least 70 % to pass through a 2 mm sieve; and — at least 50 % to pass through a 0,315 mm sieve. <p>Reactivity of fraction 1-2 mm (obtained by dry sieving) at least 65 % in citric acid</p> <p>Minimum neutralising value: 48</p> <p>Fineness determined by wet sieving:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 25 mm sieve; and — at least 30 % to pass through a 2 mm sieve. 	Usual trade names or alternative names may be added.	

1	2	3	4	5	6
6	Carbonate suspension	Product containing as its essential ingredients calcium carbonate and/or magnesium carbonate, obtained by grinding and suspending in water of natural deposits of limestone, magnesian limestone, dolomite or chalk.	<p>Minimum neutralising value: 35</p> <p>Fineness determined by wet sieving:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 2 mm sieve; — at least 80 % to pass through a 1 mm sieve; — at least 50 % to pass through a 0,315 mm sieve; and — at least 30 % to pass through a 0,1 mm sieve. 	Usual trade names or alternative names may be added.	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium if MgO \geq 3 %</p> <p>Moisture (optional)</p> <p>Reactivity and method of determination (optional)</p> <p>Fineness determined by wet sieving (optional)</p> <p>Soil incubation results (optional)</p>

G.2. Oxide and Hydroxide limes of natural origin

No	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared Forms and solubilities of the nutrients Other criteria to be declared
1	2	3	4	5	6
1(a)	Burnt lime — basic quality	Product containing as its essential ingredient calcium oxide obtained by burning of natural deposits of limestone.	<p>Minimum neutralising value: 75</p> <p>Fineness determined by dry sieving:</p> <p>Fine:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 4 mm sieve. <p>Screened:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve. 	<p>The type designation must include the fineness type “fine” or “screened”.</p> <p>Usual trade names or alternative names may be added.</p>	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium (optional)</p> <p>Fineness determined by dry sieving (optional)</p> <p>Soil incubation results (optional)</p>
1(b)	Burnt lime — premium quality	Product containing as its essential ingredient calcium oxide obtained by burning of natural deposits of limestone.	<p>Minimum neutralising value: 85</p> <p>Fineness determined by dry sieving:</p>	The type designation must include the fineness type “fine” or “screened”.	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium (optional)</p>

1	2	3	4	5	6
			<p>Fine:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 4 mm sieve. <p>Screened:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve. 	<p>Usual trade names or alternative names may be added.</p>	<p>Fineness determined by dry sieving (optional)</p> <p>Soil incubation results (optional)</p>
2(a)	Magnesian burnt lime — basic quality	Product containing as its essential ingredients calcium oxide and magnesium oxide, obtained by burning of natural deposits of magnesian limestone.	<p>Minimum neutralising value: 80</p> <p>Total Magnesium: 7 % MgO</p> <p>Fineness determined by dry sieving:</p> <p>Fine:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 4 mm sieve. <p>Screened:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve. 	<p>The type designation must include the fineness type “fine” or “screened”.</p> <p>Usual trade names or alternative names may be added.</p>	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium</p> <p>Fineness determined by dry sieving (optional)</p> <p>Soil incubation results (optional)</p>
2(b)	Magnesian burnt lime — premium quality	Product containing as its essential ingredients calcium oxide and magnesium oxide, obtained by burning of natural deposits of magnesian limestone.	<p>Minimum neutralising value: 85</p> <p>Total Magnesium: 7 % MgO</p> <p>Fineness determined by dry sieving:</p> <p>Fine:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 4 mm sieve. <p>Screened:</p> <ul style="list-style-type: none"> — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve. 	<p>The type designation must include the fineness type “fine” or “screened”.</p> <p>Usual trade names or alternative names may be added.</p>	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium</p> <p>Fineness determined by dry sieving (optional)</p> <p>Soil incubation results (optional)</p>
3(a)	Dolomitic burnt lime — basic quality	Product containing as its essential ingredients calcium oxide and magnesium oxide, obtained by burning of natural deposits of dolomite.	<p>Minimum neutralising value: 85</p> <p>Total Magnesium: 17 % MgO</p> <p>Fineness determined by dry sieving:</p>	<p>The type designation must include the fineness type “fine” or “screened”.</p>	<p>Neutralising value</p> <p>Total calcium</p> <p>Total magnesium</p>

1	2	3	4	5	6
			Fine: — at least 97 % to pass through a 4 mm sieve. Screened: — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve.	Usual trade names or alternative names may be added.	Fineness determined by dry sieving (optional) Soil incubation results (optional)
3(b)	Dolomitic burnt lime — premium quality	Product containing as its essential ingredients calcium oxide and magnesium oxide, obtained by burning of natural deposits of dolomite.	Minimum neutralising value: 95 Total Magnesium: 17 % MgO Fineness determined by dry sieving: Fine: — at least 97 % to pass through a 4 mm sieve. Screened: — at least 97 % to pass through a 8 mm sieve; and — no more than 5 % to pass through a 0,4 mm sieve.	The type designation must include the fineness type “fine” or “screened”. Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium Fineness determined by dry sieving (optional) Soil incubation results (optional)
4	Hydrated burnt lime (slaked lime)	Product containing as its essential ingredients calcium hydroxide, obtained by burning and slaking of natural deposits of limestone.	Minimum neutralising value: 65 Fineness determined by wet sieving: — at least 95 % to pass through a 0,16 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium (optional) Fineness determined by wet sieving (optional) Moisture (optional) Soil incubation results (optional)
5	Hydrated magnesian burnt lime (slaked magnesian lime)	Product containing as its essential ingredients calcium hydroxide and magnesium hydroxide, obtained by burning and slaking of natural deposits of magnesian limestone.	Minimum neutralising value: 70 Total Magnesium: 5 % MgO Fineness determined by wet sieving: — at least 95 % to pass through a 0,16 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium Fineness determined by wet sieving (optional) Moisture (optional) Soil incubation results (optional)

1	2	3	4	5	6
6	Hydrated dolomitic burnt lime	Product containing as its essential ingredients calcium hydroxide and magnesium hydroxide, obtained by burning and slaking, of natural deposits of dolomite.	Minimum neutralising value: 70 Total Magnesium: 12 % MgO Fineness determined by wet sieving: — at least 95 % to pass through a 0,16 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium Fineness determined by wet sieving (optional) Moisture (optional) Soil incubation results (optional)
7	Hydrated lime suspension	Product containing as its essential ingredients calcium hydroxide and/or magnesium hydroxide, obtained by burning, slaking and suspending in water of natural deposits of limestone, magnesian limestone or dolomite.	Minimum neutralising value: 20 Fineness determined by wet sieving: — at least 95 % to pass through a 0,16 mm sieve.	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium if MgO \geq 3 % Moisture (optional) Fineness determined by wet sieving (optional) Soil incubation results (optional)

G.3. Limes from industrial processes

No	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared Forms and solubilities of the nutrients Other criteria to be declared
1	2	3	4	5	6
1(a)	Sugar factory lime	Product from sugar production obtained by carbonation using exclusively burnt lime from natural sources and containing as essential ingredient finely divided calcium carbonate.	Minimum neutralising value: 20	Usual trade names or alternative names may be added.	Neutralising value Total calcium Total magnesium (optional) Moisture (optional) Reactivity and method of determination (optional) Soil incubation results (optional)
1(b)	Sugar factory lime suspension		Minimum neutralising value: 15		

G.4. Mixed limes

No	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared Forms and solubilities of the nutrients Other criteria to be declared
1	2	3	4	5	6
1	Mixed lime	Product obtained by mixing types listed in sections G1 and G2.	Minimum carbonate content: 15 % Maximum carbonate content: 90 %	The word "magnesian" shall be added to the type designation if MgO \geq 5 %. Usual trade names or alternative names may be added.	Types as specified in sections G.1 and G.2 Neutralising value Total calcium Total magnesium if MgO \geq 3 % Soil incubation results (optional) Moisture (optional)

G.5. Mixtures of liming materials with other EC fertiliser types

No	Type designation	Data on method of production and essential ingredients	Minimum content of nutrients (percentage by weight) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared Forms and solubilities of the nutrients Other criteria to be declared
1	2	3	4	5	6
1	Mixture of [type designation in section G.1 to G.4] with [type designation in section A, B, D].	Product obtained by mixing, compacting or granulating liming materials listed in sections G.1 to G.4 with fertiliser types listed in sections A, B or D. The following mixtures are prohibited: — ammonium sulphate (Type A.1.4) or urea (Type A.1.9) with oxide limes or hydroxide limes listed in Section G.2; — mixing and then compacting or granulating super phosphates of the types A.2.2(a), (b) or (c) with any of the types described in Section G.1 to G.4.	Neutralising value: 15 3 % N for mixtures containing fertiliser types with a minimum N content 3 % P ₂ O ₅ for mixtures containing fertiliser types with a minimum content P ₂ O ₅ 3 % K ₂ O for mixtures containing fertiliser types with a minimum content K ₂ O Potassium expressed as water-soluble K ₂ O	Other requirements mentioned in the individual entries.	Neutralising Value Nutrients according to the nutrient declarations of the individual fertiliser types. Total calcium Total magnesium if MgO \geq 3 % If the chloride content does not exceed 2 % Cl, the words "low in chloride" may be added Moisture (optional) Fineness (optional)

ANNEX II

Annex II to Regulation (EC) No 2003/2003 is amended as follows:

(1) Section 1.3 is amended as follows:

- (a) In the first entry, the type designation 'kainit' is replaced by 'crude potassium salt'.
- (b) In the second entry, the type designation 'enriched kainit salt' is replaced by 'enriched crude potassium salt'.

(2) The following Section 5 is added:

'5. Liming materials

The tolerances allowed in respect of the declared calcium and magnesium shall be:

Magnesium oxide:

— up to and including 8 % MgO	1
— between 8 % and 16 % MgO	2
— more than 16 % MgO	3

Calcium oxide 3

The tolerance allowed in respect of the declared neutralising value shall be:

Neutralising value 3

The tolerance applicable to the declared percentage of material passing a specific sieve shall be:

Fineness 10'

————

ANNEX III

In Annex IV to Regulation (EC) No 2003/2003, Section B is amended as follows:

- (1) Method 6.1 is replaced by the following:

Method 6.1

Determination of chlorides in the absence of organic material

EN 16195: Fertilisers — Determination of chlorides in the absence of organic material

This method of analysis has been ring-tested.

- (2) Methods 8.6 to 8.8 are replaced by the following:

Method 8.6

Manganimetric determination of extracted calcium following precipitation in the form of oxalate

EN 16196: Fertilisers — Manganimetric determination of extracted calcium following precipitation in the form of oxalate

This method of analysis has been ring-tested.

Method 8.7

Determination of magnesium by atomic absorption spectrometry

EN 16197: Fertilisers — Determination of magnesium by atomic absorption spectrometry

This method of analysis has been ring-tested.

Method 8.8

Determination of magnesium by complexometry

EN 16198: Fertilisers — Determination of magnesium by complexometry

This method of analysis has been ring-tested.

- (3) Method 8.10 is replaced by the following:

Method 8.10

Determination of the sodium extracted by flame-emission spectrometry

EN 16199: Fertilisers — Determination of the sodium extracted by flame-emission spectrometry

This method of analysis has been ring-tested.

- (4) The following methods 14 are added:

Methods 14

Liming materials

Method 14.1

Determination of size distribution of liming materials by dry and wet sieving

EN 12948: Liming materials — Determination of size distribution by dry and wet sieving

This method of analysis has been ring-tested.

Method 14.2

Determination of the reactivity of carbonate and silicate liming materials with hydrochloric acid

EN 13971: Carbonate and silicate liming materials — Determination of reactivity — Potentiometric titration method with hydrochloric acid

This method of analysis has been ring-tested.

Method 14.3

Determination of the reactivity by automatic titration method with citric acid

EN 16357: *Carbonate liming materials — Determination of reactivity — Automatic titration method with citric acid*

This method of analysis has been ring-tested.

Method 14.4

Determination of the neutralising value of liming materials

EN 12945: *Liming materials — Determination of neutralising value — Titrimetric methods*

This method of analysis has been ring-tested.

Method 14.5

Determination of calcium in liming materials by the oxalate method

EN 13475: *Liming materials — Determination of calcium content — Oxalate method*

This method of analysis has been ring-tested.

Method 14.6

Determination of calcium and magnesium in liming materials by complexometry

EN 12946: *Liming materials — Determination of calcium and magnesium content — Complexometric method*

This method of analysis has been ring-tested.

Method 14.7

Determination of magnesium in liming materials by atomic absorption spectrometric method

EN 12947: *Liming materials — Determination of magnesium content — Atomic absorption spectrometric method*

This method of analysis has been ring-tested.

Method 14.8

Determination of moisture content

EN 12048 *Solid fertilisers and liming materials — Determination of moisture content — Gravimetric method by drying at 105 °C +/- 2 °C*

This method of analysis has been ring-tested.

Method 14.9

Determination of the breakdown of granules

EN 15704: *Liming materials — Determination of the breakdown of granulated calcium and calcium/magnesium carbonates under the influence of water*

This method of analysis has been ring-tested.

Method 14.10

Determination of product effect by soil incubation

EN 14984: *Liming materials — Determination of product effect on soil pH — Soil incubation method*

This method of analysis has been ring-tested.
