SLOVENSKI STANDARD
SIST EN 15924:2011

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Nadomešča:
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Gnojila - Določevanje finosti mletja mehkih naravnih fosfatov

Fertilizers - Determination of the fineness of grinding of soft natural phosphates

Düngemittel - Bestimmung der Mahlfeinheit von weicherdigem Rohphosphat

Engrais - Détermination de la finesse de monture des phosphates naturels tendres

Ta slovenski standard je istoveten z: EN 15924:2011

ICS:

65.080	Gnojila	Fertilizers

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EUROPEAN STANDARD

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English Version

Fertilizers - Determination of the fineness of grinding of soft natural phosphates

Engrais - Détermination de la finesse de monture des phosphates naturels tendres

Düngemittel - Bestimmung der Mahlfeinheit von weicherdigem Rohphosphat

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Foreword

This document (EN 15924:2011) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 15924:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The following changes have been made to the former edition:

a) the CEN Technical Specification has been adopted as a European Standard;

b) the document has been editorially revised.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This document specifies a method for the determination of the fineness of grinding of soft natural phosphates by wet sieving.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1482-2, *Fertilizers and liming materials — Sampling and sample preparation — Part 2: Sample preparation*

EN 12944-1:1999, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 1: General terms*

EN 12944-2:1999, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 2: Terms relating to fertilizers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-1:1999 and EN 12944-2:1999 apply.

4 Principle

For samples of fine particle size, agglomeration may occur, thus making dry sieving difficult. For this reason, wet sieving is normally used.

By mechanical wet sieving, the quantities of product with a granule size greater than 0,125 mm and those with a granule size between 0,063 mm and 0,125 mm are determined, and the percentage of fineness of grinding is calculated.

5 Sampling

Sampling is not part of the method specified in this document. A recommended sampling method is given in EN 1482-1.

Sample preparation shall be carried out in accordance with EN 1482-2.

6 Reagents

6.1 Sodium hexametaphosphate, solution 1 %.

7 Apparatus

7.1 Sieves, with aperture sizes of 0,063 mm and 0,125 mm respectively of standard ranges, diameter 20 cm and height 5 cm).

7.2 Collecting containers.

7.3 Glass funnel, of 20 cm diameter mounted on a stand.

7.4 250 ml beakers.

7.5 Drying oven.

8 Procedure

8.1 Test portion

Weigh, to the nearest 0,05 g, approximately 50 g of the laboratory sample. Wash both sides of the sieve with water and place the sieve with 0,125 mm apertures above the 0,063 mm sieve.

8.2 Sieving procedure

8.2.1 Place the test portion (8.1) on the top sieve. Sieve under a small jet of cold water (tap water may be used) until the water is practically clear when it passes through. Care should be taken to ensure that the flow of water is such that the lower sieve never will be filled with water.

8.2.2 When the residue on the top sieve seems to remain more or less constant, remove this sieve, and place on a collecting container (7.2).

8.2.3 Continue the wet sieving through the lower sieve for a few minutes, until the water passing through is nearly clear.

8.2.4 Replace the 0,125 mm sieve over the 0,063 mm sieve. Transfer any deposit from the collecting container to the top sieve and begin sieving again under a small jet of water until this water becomes almost clear once more.

8.2.5 Quantitatively transfer each of the residues into a different weighed beaker (7.4) by means of the funnel (7.3). Suspend each residue by filling the beakers with water. Leave to stand for about 1 min, decant, as much water as possible.

8.2.6 Place the beakers in the drying oven (7.5) at (150 ± 5) °C until constant weight.

8.2.7 Allow them to cool and weigh.

8.2.8 If the presence of lumps is observed after sieving, the analysis should be carried out again in the following way.

Slowly pour 50 g of the laboratory sample into a 1 l flask containing 500 ml of the sodium hexametaphosphate solution (6.1) stirring continuously. Stopper the flask and shake vigorously by hand to break up the lumps. Transfer the whole suspension into the top sieve and wash the flask thoroughly. Continue the analysis as described in 8.2.

9 Calculation and expression of the result

Calculate the fineness of grinding of the sample passing the sieve with 0,125 mm aperture size, $F_{0,125}$, in percent (mass fraction) according to the following equation:

$$F_{0,125} = (M - M_1) \times 2 \quad (1)$$

Calculate the fineness of grinding of the sample passing the sieve with 0,063 mm aperture size, $F_{0,063}$, in percent (mass fraction) according to the following equation:

$$F_{0,063} = [M - (M_1 + M_2)] \times 2 \quad (2)$$

where

M is the mass, in grams, of the test portion;

M_1 is the mass, in grams, of the residue on the sieve, with 0,125 mm aperture size;

M_2 is the mass, in grams, of the residue on the sieve, with 0,063 mm aperture size.

Round up the results of these calculations to the nearest unit.

10 Test report

The test report shall contain at least the following information:

a) the test method used with a reference to this document;

b) all information necessary for the complete identification of the sample;

c) date of sampling and sampling procedure (if known);

d) date when the analysis was finished;

e) the results of the determination, expressed as percentage of fineness of the fertilizer;

f) all operating details not specified in this document, or regarded as optional, together with details of any incidents that occurred when performing the method which might have influenced the test result(s).