



BSI Standards Publication

# Fertilizers — Determination of the fineness of grinding (dry procedure)

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**National foreword**

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ICS 65.080

English Version

**Fertilizers - Determination of the fineness of grinding (dry procedure)**

Engrais - Détermination de la finesse de mouture (procédé à sec)

Düngemittel - Bestimmung der Mahlfeinheit (trockenes Verfahren)

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## Foreword

This document (EN 15928:2010) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

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## 1 Scope

This European Standard specifies the dry procedure for the determination of the fineness of grinding, which is applicable to all EC type fertilizers in which requirements are given of fineness of grinding using 0,630 mm and 0,160 mm.

## 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*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

## 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

By mechanical sieve shaking, the quantities of product with a granule size greater than 0,630 mm and those with a granule size between 0,160 mm and 0,630 mm are determined, and the percentage of fineness of grinding is calculated.

## 5 Apparatus

### 5.1 Mechanical sieve shaker.

**5.2 Sieves**, with aperture sizes of 0,160 mm and 0,630 mm respectively of standard ranges (200 mm diameter and 50 mm high).

For technical requirements and testing of sieves of metal wire cloth see ISO 3310-1.

## 6 Sampling and sample preparation

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.

## 7 Procedure

Weigh, to the nearest 0,05 g, approximately 50 g of the test sample. Assemble the two sieves and the collecting container on the shaker (5.1), the sieve with the larger apertures being placed on top. Place the test portion on the top. Sieve for 10 min and remove the part collected on the bottom. Start the apparatus up again and after one minute check that the amount collected on the bottom during this time is not more than 250 mg. Repeat the process (for 1 min each time) until the amount collected is less than 250 mg. Weigh the residual material on both sieves separately.

## 8 Calculation and expression of the result

Calculate the fineness of grinding of the sample passing the sieve with 0,630 mm aperture size,  $F_{0,630}$ , in percent (mass fraction) according to the following formula:

$$F_{0,630} = (M - M_1) \times 2 \quad (1)$$

Calculate the fineness of grinding of the sample passing the sieve with 0,160 mm aperture size,  $F_{0,160}$ , in percent (mass fraction) according to the following formula:

$$F_{0,160} = [M - (M_1 + M_2)] \times 2 \quad (2)$$

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 0,630 mm aperture size;

$M_2$  is the mass, in grams, of the residue on the sieve, with 0,160 mm aperture size.

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

## 9 Test report

The test report shall contain at least the following information:

- a) the test method used with a reference to this European Standard;
- 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).

## Bibliography

- [1] Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers, Official Journal L 304, 21/11/2003, P. 0001-0194, Annex IV, method 7.1
- [2] EN 1482-1, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*





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