
Trdna gnojila in sredstva za apnjenje - Določevanje vlage - Gravimetrična metoda s sušenjem pri (105 ± 2) °C (modificiran ISO 8190:1992)

Solid fertilizers and liming materials - Determination of moisture content - Gravimetric method by drying at (105 +/- 2)°C (ISO 8190:1992 modified)

Feste Düngemittel und Calcium-/Magnesium-Bodenverbesserungsmittel - Bestimmung des Feuchtegehaltes - Gravimetrisches Verfahren durch Trocknung bei (105 +/- 2)°C (ISO 8190:1992 modifiziert)

Engrais solides et amendements calciques et/ou magnésiens - Détermination de la teneur en eau - Méthode gravimétrique par séchage a (105 +/- 2)°C (ISO 8190:1992 modifiée)

Ta slovenski standard je istoveten z: EN 12048:1996

ICS:

65.080 Gnojila Fertilizers

SIST EN 12048:1999 **en**

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EUROPEAN STANDARD

EN 12048

NORME EUROPÉENNE

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EUROPÄISCHE NORM

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ICS 65.080

Descriptors: fertilizers, tests, drying, determination, humidity, gravimetric analysis

English version

**Solid fertilizers and liming materials -
Determination of moisture content - Gravimetric
method by drying at (105 + 2)°C
(ISO 8190:1992 modified)**

Engrais solides et amendements calciques et/ou
magnésiens - Détermination de la teneur en eau
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2)°C (ISO 8190:1992 modifiée)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard from technical committee ISO/TC 134 "Fertilizers and soil conditioners" of the International Organisation for Standardization (ISO) has been taken over as a European Standard by the Technical Committee CEN/TC 260 "Fertilizers and liming materials" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by March 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of International Standard 8190:1992 was approved by CEN as a European Standard with agreed common modifications as given below :

- the title and scope of the standard have been extended to include liming materials ;
- in clause 2 and clause 6, the reference to ISO 8358:1991 has been replaced by EN 1482:1996 ;
- in clause 9, a requirement to include the method of sampling and sample preparation in the test report has been added ;
- a bibliography has been added as informative annex ZA.

The common modifications have been inserted in the text of the reference document and indicated by a vertical line in the left margin.

1 Scope

This European Standard specifies a gravimetric method, by drying at (105 ± 2) °C, for the determination of the moisture content of fertilizers and liming materials.

The method is applicable to siliceous and carbonic liming materials and the following phosphatic fertilizers :

- superphosphates ;
- natural phosphates ;
- ground rock phosphates ;
- partially solubilized rock phosphates.

The method is not applicable to hydrated or burnt lime, to ammonium compounds or magnesium sulfates.

2 Normative reference

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1482:1996 Sampling of solid fertilizers and liming materials

3 Principle

Drying a test portion at (105 ± 2) °C for 5 h and determination of the resulting loss in mass.

4 Material

4.1 Silica gel desiccant, self-indicating, particle size 2 mm to 5 mm.

Activate the silica gel, immediately prior to use, by placing about 100 g in the evaporating basin (5.3) and transferring the basin to the oven (5.4), set at 105 °C, for 2 h. Transfer the basin with its contents to a desiccator and allow to cool to ambient temperature.

5 Apparatus

Ordinary laboratory apparatus and, in particular, the following.

5.1 Weighing bottle, 70 mm to 80 mm diameter, fitted with a stopper.

5.2 Vacuum desiccator, internal diameter about 200 mm, containing silica gel desiccant (4.1).

5.3 Evaporating basin, internal diameter about 100 mm.

5.4 Oven, capable of being controlled at (105 ± 2) °C.

6 Preparation of test sample

Prepare the test sample, without grinding, in accordance with EN 1482.

If necessary, quickly crush (not grind) the material in a mortar. Mix all the material and immediately take the test portion (7.1).

NOTE 1 : It is advisable to crush the material in an atmosphere of relative humidity 40 % to 60 %.

7. Procedure

7.1 Test portion

Dry the weighing bottle (5.1) in the oven (5.4), set at 105 °C, for 2 h. Allow to cool to ambient temperature in a desiccator. Weigh, to the nearest 0,001 g, about 10 g of the test sample into the tared weighing bottle.

7.2 Determination

Standard to which reference is made, or regarded as optional.

Place the unstoppered weighing bottle (5.1) containing the test portion, and the stopper, in the oven (5.4), set at 105 °C, for 5 h. Transfer the weighing bottle and the stopper to the desiccator (5.2) and allow to cool to ambient temperature. Open the desiccator, quickly restopper the weighing bottle and weigh the bottle and its contents to the nearest 0,001 g.

8 Expression of results

The moisture content of the fertilizer or of the liming material expressed as a percentage by mass, is given by the formula :

$$\frac{m_0 - m_1}{m_0} \times 100$$

where :

m_0 is the mass, in grams, of the test portion before drying.

m_1 is the mass, in grams, of the test portion after drying.

Round the result, the mean of at least two determinations, to 0,1 % (m/m).

9 Test report

The test report shall include the following information :

- a) a reference to this European Standard ;
- b) the method of sampling and sample preparation ;
- c) the results and the method of expression used ;
- d) all information necessary for the complete identification of the sample ;
- e) any unusual features noted during the determination ;
- f) any operation not included in this European Standard or in the European

ANNEX ZA
(informative)**Bibliography**

ISO 3963:1977	Fertilizers - Sampling from a conveyor by stopping the belt
ISO 7742:1988	Solid fertilizers - Reduction of samples
ISO 8633:1922	Solid fertilizers - Simple sampling method for small lots

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Annex A (informative)

where :

Precision

M is the arithmetic mean of the two test results (i.e. two determinations).

A.1 General

The following precision data were determined from an experiment conducted in 1982 involving 21 laboratories using one sample of each of the following fertilizers : ammonium sulfate ; natural phosphate ; superphosphate 18 % (granular and also powdered). The method used employed the grinding and sieving of the sample whereas the published method involves crushing and therefore these data are included for information only.

A.2 Repeatability

The difference between two single test results obtained from identical test material by one analyst using the same apparatus within a short time-interval should exceed the repeatability limit, r , given by the following equation, on average not more than once in 20 cases in the normal and correct operation of the method.

$$r = 0,15\sqrt{m}$$

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where :

m is the arithmetic mean of the two test results (i.e. two determinations).

A.3 Reproducibility

The difference between two single and independent test results found by two analysts working in different laboratories using identical test material should exceed the reproducibility limit, R , given by the following equation, on average not more than once in 20 cases in the normal and correct operation of the method.

$$R = 0,6\sqrt{M}$$

INTERNATIONAL
STANDARD**ISO**
8190First edition
1992-11-01

**Solid fertilizers — Determination of
moisture content — Gravimetric method
by drying at $(105 \pm 2) ^\circ\text{C}$** **iTeh STANDARD PREVIEW***Engrais solides — Détermination de la teneur en eau — Méthode par
séchage à $(105 \pm 2) ^\circ\text{C}$*
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ISO 8190:1992(E)