



SLOVENSKI STANDARD
SIST EN 15926:2011

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Nadomešča:
SIST-TS CEN/TS 15926:2010

Gnojila - Ekstrakcija v vodi topnega žvepla v različnih oblikah

Fertilizers - Extraction of water soluble sulfur where the sulfur is in various forms

Düngemittel - Extraktion von wasserlöslichem Schwefel, der in verschiedener Form vorliegen kann

Engrais - Extraction du soufre soluble dans l'eau, lorsque le soufre est présent sous différentes formes

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Ta slovenski standard je istoveten z: EN 15926:2011

ICS:

65.080

Gnojila

Fertilizers

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EUROPEAN STANDARD

EN 15926

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2011

ICS 65.080

Supersedes CEN/TS 15926:2009

English Version

**Fertilizers - Extraction of water soluble sulfur where the sulfur is
in various forms**

Engrais - Extraction du soufre soluble dans l'eau, lorsque le
soufre est présent sous différentes formes

Düngemittel - Extraktion von wasserlöslichem Schwefel,
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This European Standard was approved by CEN on 18 August 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 15926:2011) 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of an identical text or by endorsement, at the latest by March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.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 15926:2009.

The following changes have been made to the former edition:

- a) the CEN Technical Specification has been adopted as a European Standard;
- b) Clause 9 "Test report" has been added;
- c) The document has been editorially revised.

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

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.

EN 15926:2011 (E)**1 Scope**

This document specifies a method for the extraction of water-soluble sulfur contained in fertilizers in various forms.

The method is applicable to EC-fertilizers for which a declaration of the water-soluble sulfur trioxide is provided for.

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*

EN 15749, *Fertilizers — Determination of sulfates content using three different methods*

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

The sulfur is dissolved in cold water and converted into sulfate by oxidation with hydrogen peroxide in an alkaline medium.

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. Grinding of the laboratory sample is recommended for homogeneity reasons.

6 Reagents

Use only reagents of recognized analytical grade and distilled or demineralized water.

6.1 Diluted hydrochloric acid.

Mix one volume of hydrochloric acid, $w = 37\%$, with one volume of water.

6.2 Sodium hydroxide solution, $w = 30\%$ to 32% .

6.3 Hydrogen peroxide solution, $w = 30 \%$.

7 Apparatus

7.1 500 ml graduated flask, Stohmann.

7.2 Rotary shaker, 30 to 40 turns per minute.

7.3 Electric hot plate, with adjustable temperature.

8 Procedure

8.1 Test portion

Where fertilizers contain a maximum of 3 % of sulfur (S) i. e. 7,5 % SO_3 , weigh an amount of 5 g of the laboratory sample of fertilizer to an accuracy of 1 mg.

Where fertilizers contain more than 3 % of sulfur (S), weigh an amount of 1 g of the laboratory sample of fertilizer to an accuracy of 1 mg.

Place the test portion in a flask (7.1).

8.2 Preparation of the solution

Add approximately 400 ml of water to the test portion in the flask (7.1). Stopper. Shake in the rotary shaker (7.2) for 30 min. Let stand for 24 h at room temperature without shaking or stirring and make up to volume with water and mix. Pass through a dry filter into a dry container. Stopper if the solution is not to be used immediately.

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8.3 Oxidation of the aliquot portion to be analyzed

Take an aliquot portion of the extraction solution (see 8.2) not exceeding 50 ml and, if possible, containing between 20 mg and 100 mg of sulfur (S).

Make up the volume to 50 ml with water, if necessary. Add 3 ml of sodium hydroxide solution (6.2) and 2 ml of hydrogen peroxide solution (6.3). Cover with a watch glass and boil gently for 1 h on the hot plate (7.3). Keep adding 1 ml increments of hydrogen peroxide solution for as long as the reaction continues (maximum quantity 5 ml).

Then leave to cool. Remove the watch glass and wash the underside into the beaker. Add approximately 20 ml of diluted hydrochloric acid (6.1). Make up to approximately 300 ml with water.

Determine the content of sulfates on the whole of the oxidized solution in accordance with EN 15749.

EN 15926:2011 (E)**9 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 extraction was finished;
- e) 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).

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