



**SLOVENSKI STANDARD**  
**SIST-TS CEN/TS 15926:2010**  
**01-februar-2010**

---

; bc fU! '9 \_glfU\_ VjUj 'j cX] hdbY[ Uyj Yd`Uj `fUh` b] `cV] \_U

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

**iteh STANDARD PREVIEW**  
**(standards.iteh.ai)**

Ta slovenski standard je istoveten z: **CEN/TS 15926:2009**  
SIST-TS CEN/TS 15926:2010  
<https://standards.iteh.ai/catalog/standards/sist/58666220-a07b-4eac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

---

**ICS:**

65.080                      Gnojila                                      Fertilizers

**SIST-TS CEN/TS 15926:2010**                                      **en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST-TS CEN/TS 15926:2010

<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
TECHNISCHE SPEZIFIKATION

**CEN/TS 15926**

September 2009

ICS 65.080

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, der in verschiedener Form vorliegen kann

This Technical Specification (CEN/TS) was approved by CEN on 3 August 2009 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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 United Kingdom.

SIST-TS CEN/TS 15926:2010

<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>		Page
Foreword.....		3
1	Scope .....	4
2	Normative references .....	4
3	Terms and definitions .....	4
4	Principle.....	4
5	Sampling.....	4
6	Reagents.....	4
7	Apparatus .....	5
8	Procedure .....	5
Bibliography.....		6

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CEN/TS 15926:2010](https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010)  
<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

## Foreword

This document (CEN/TS 15926:2009) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

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 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 announce this Technical Specification: Austria, Belgium, Bulgaria, 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.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TS CEN/TS 15926:2010](https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010)

<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

**CEN/TS 15926:2009 (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*

CEN/TS 15749, *Fertilizers – Determination of sulfates content using three different methods*

**iTeh STANDARD PREVIEW**

**3 Terms and definitions**

**(standards.iteh.ai)**

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

<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

**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 %  $\text{SO}_3$ , 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.

<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fcb797cabf8/sist-ts-cen-ts-15926-2010>

### 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 CEN/TS 15749.

## 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, pp. 1-194, Annex IV, method 8.4
- [2] EN 1482-1, *Fertilizers and liming materials – Sampling and sample preparation – Part 1: Sampling*

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TS CEN/TS 15926:2010](https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fc797cabf8/sist-ts-cen-ts-15926-2010)  
<https://standards.iteh.ai/catalog/standards/sist/5b6b6220-a67b-4cac-be6d-fc797cabf8/sist-ts-cen-ts-15926-2010>