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**FINAL DRAFT**  
**FprCEN/TS 15961**

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English Version

**Fertilizers - Extraction of water-soluble calcium, magnesium,  
sodium and sulfur (in the forms of sulfates) (Method 8.3)**

Engrais - Extraction des formes solubles dans l'eau du  
calcium, du magnésium, du sodium et du soufre sous  
forme de sulfate

Düngemittel - Extraktion von wasserlöslichem Calcium,  
Magnesium und Natrium sowie von Schwefel in Form von  
Sulfat

This draft Technical Specification is submitted to CEN members for formal vote. It has been drawn up by the Technical Committee CEN/TC 260.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (FprCEN/TS 15961:2009) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

This document is currently submitted to the Formal Vote.

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

## FprCEN/TS 15961:2009 (E)

### 1 Scope

This document specifies a method for the extraction of water-soluble calcium, magnesium, sodium and sulfur (in the form of sulfates), so that the same extract may be used for the determination of each nutrient required.

The method is solely applicable to fertilizers listed in Regulation (EC) 2003/2003, Annex I (see [1]), for which a declaration of the water-soluble calcium, magnesium, sodium, and sulfur (in the form of sulfates) is provided for in this Regulation.

### 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

Extraction of the calcium, magnesium, sodium, and sulfur (present in the form of sulfates) in the fertilizer by boiling in water under the specified conditions.

### 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

**6.1 Water**, distilled or demineralized.

## 7 Apparatus

### 7.1 Standard laboratory equipment

7.2 **Electric hot plate**, with adjustable temperature.

7.3 **Beaker**, capacity 600 ml.

7.4 **Graduated flask**, capacity 500 ml.

7.5 **Dry filter**.

## 8 Procedure

### 8.1 Test portion

Where fertilizers contain no sulfur or where they contain, at the same time, no more than 3 % of sulfur (S) i. e. 7,5 %  $\text{SO}_3$ , and no more than 4 % of calcium (Ca) i. e. 5,6 % CaO, weigh 5 g of the test sample to the nearest 1 mg. Place it in the beaker (7.3).

Where fertilizers contain more than 3 % of sulfur (S) and more than 4 % of calcium (Ca), weigh 1 g of the test sample to the nearest 1 mg. Place it in the beaker (7.3).

### 8.2 Preparation of the solution

Add approximately 400 ml of water (6.1) to the test portion (8.1) and boil for 30 min. Allow to cool, stirring occasionally. Decant quantitatively into a graduated flask (7.4). Make up to volume with water (6.1), and mix. Pass through a filter (7.5) into a dry container. Discard the initial portions of the filtrate.

The filtrate shall be completely transparent. Stopper if the filtrate is not used immediately.

## 9 Test report

The test report shall contain at least the following information:

- a) all information necessary for the complete identification of the sample;
- b) the test method used with reference to this document;
- c) the test results obtained;
- d) date of sampling and sampling procedure (if known);
- e) date when the analysis was finished;
- f) whether the requirement of the repeatability limit has been fulfilled;
- g) all operating details not specified in this document, or regarded as optional, together with details of any incidents 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 I and Annex IV, method 8.1
- [2] EN 1482-1, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*