

**LUBIMATERJALID. KALTSIUMISISALDUSE JA  
MAGNEESIUMISISALDUSE MÄÄRAMINE.  
KOMPLEKSOMEETRILINE MEETOD**

**Liming materials - Determination of calcium content  
and magnesium content - Complexometric method**

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

See Eesti standard EVS-EN 12946:2000 sisaldab Euroopa standardi EN 12946:2000 ja selle paranduse AC:2002 ingliskeelset teksti.	This Estonian standard EVS-EN 12946:2000 consists of the English text of the European standard EN 12946:2000 and corrigendum AC:2002.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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ICS 65.080

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ICS 65.080

English version

Liming materials

Determination of calcium content and magnesium content –  
Complexometric method

Amendements calciques et/ou  
magnésiens – Détermination de la  
teneur en calcium et de la teneur en  
magnésium – Méthode par  
complexométrie

Calcium-/Magnesium-Bodenver-  
besserungsmittel – Bestimmung des  
Calcium- und Magnesiumgehaltes –  
Komplexometrisches Verfahren

This European Standard was approved by CEN on 1999-11-13.

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 Central Secretariat or to any CEN member.

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CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

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

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

## Contents

	<b>Page</b>
<b>Foreword</b> .....	<b>2</b>
<b>1 Scope</b> .....	<b>3</b>
<b>2 Normative references</b> .....	<b>3</b>
<b>3 Principle</b> .....	<b>3</b>
<b>4 Reagents</b> .....	<b>3</b>
<b>5 Apparatus</b> .....	<b>5</b>
<b>6 Sampling</b> .....	<b>5</b>
<b>7 Procedure</b> .....	<b>5</b>
<b>8 Expression of results</b> .....	<b>6</b>
<b>9 Precision</b> .....	<b>7</b>
<b>10 Test report</b> .....	<b>8</b>
<b>Bibliography</b> .....	<b>8</b>

## Foreword

This European Standard has been prepared by 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 July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies a complexometric method for the determination of the calcium content and the magnesium content of liming materials.

It is not applicable to products with a mass fraction less than 2 % (*m/m*) magnesium or those with a mass fraction more than 1 % P<sub>2</sub>O<sub>5</sub> and is not applicable to silicate liming materials.

## 2 Normative references

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 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 459-2, *Building lime - Part 2 : Test methods*.

EN 1482, *Sampling of solid fertilizers and liming materials*.

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

## 3 Principle

A test portion is extracted with boiling hydrochloric acid solution. After filtration and dilution, an aliquot portion is titrated against EDTA solution with eriochrome black T as indicator in order to measure magnesium. A second aliquot portion is titrated against EDTA with calcein/thymolphthalein or calcon carbonic acid as indicator in order to measure calcium and magnesium.

## 4 Reagents

### 4.1 General

In principle, commercially available standard solutions may be used instead of standard solutions produced on-site in the laboratory. Variations in concentration shall be taken into account for the calculation of the results.

### 4.2 Hydrochloric acid solution

$$\rho_{20} = 1,09 \text{ g/ml}$$

Add 1 part by volume of hydrochloric acid ( $\rho_{20} = 1,18 \text{ g/ml}$ ) to 1 part by volume of water.

### 4.3 Hydrochloric acid solution

$$c(\text{HCl}) \approx 1 \text{ mol/l approximately}$$

### 4.4 Hydrochloric acid solution

$$c(\text{HCl}) \approx 0,5 \text{ mol/l approximately}$$

### 4.5 Standard calcium solution, containing 2,004 g of calcium per litre

Weigh 5,004 g of dry calcium carbonate into a 500 ml beaker and add 100 ml of water.

Under continuous stirring, slowly add 120 ml of hydrochloric acid solution (4.3).

Drive off the carbon dioxide by boiling, cool and transfer the solution quantitatively into a 1 000 ml volumetric flask and dilute to the mark with water.