LUBIMATERJALID. KALTSIUMISISALDUSE JA MAGNEESIUMISISALDUSE MÄÄRAMINE. KOMPLEKSOMEETRILINE MEETOD

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

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12946:2023 sisaldab Euroopa standardi EN 12946:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 12946:2023 consists of the English text of the European standard EN 12946:2023.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.06.2023.	Date of Availability of the European standard is 14.06.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

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

Amendements minéraux basiques - Détermination de la teneur en calcium et de la teneur en magnésium - Méthode par complexométrie

Kalkdünger - Bestimmung des Calcium- und Magnesiumgehaltes - Komplexometrisches Verfahren

This European Standard was approved by CEN on 14 May 2023.

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European foreword

This document (EN 12946:2023) 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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12946:2000 and EN 12946:2000/AC:2002.

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

The main changes compared to the previous edition are listed below:

a) Normative references updated and added;

b) Reference to EN 12944-3 added in Clause 3;

c) Principle (Clause 4) updated to recognize the possibility to use automatic titration;

d) Reference updated in Clause 7;

e) Bibliography updated.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

The complexometric method for the determination of calcium content and magnesium content in liming materials is based on a method, which is described in VDLUFA, Manual II of analysing methods for fertilizers [1].

1 Scope

This document 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 % magnesium or those with a mass fraction more than 1 % P_2O_5 and is not applicable to silicate liming materials.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1482-1, *Fertilizers and liming materials - Sampling and sample preparation - Part 1: Sampling*

EN 1482-3, *Fertilizers and liming materials - Sampling and sample preparation - Part 3: Sampling of static heaps*

EN 12944-3, *Fertilizers and liming materials - Vocabulary - Part 3: Terms relating to liming materials*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-3 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

4 Principle

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

This method can be performed manually or alternatively by means of an automatic titrator as far as equivalence is proved.

5 Reagents

5.1 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.

5.2 Hydrochloric acid solution

Density at 20 °C ρ_{20} = 1,09 g/ml

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