LUBIMATERJALID. NEUTRALISEERIMISVÄÄRTUSE MÄÄRAMINE. TIITRIMISMEETODID

Liming materials - Determination of neutralizing value - Titrimetric methods

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 12945:2014+A1:2016 sisaldab Euroopa standardi EN 12945:2014+A1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 12945:2014+A1:2016 consists of the English text of the European standard EN 12945:2014+A1:2016.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 26.10.2016.	Date of Availability of the European standard is 26.10.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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 neutralizing value - Titrimetric methods

Amendements minéraux basiques - Détermination de la valeur neutralisante - Méthode par trimétrie

Kalkdünger - Bestimmung des Neutralisationswertes - Titrimetrische Verfahren

This European Standard was approved by CEN on 8 February 2014 and includes Amendment 1 approved by CEN on 11 June 2016.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Contents

Page

European foreword

This document (EN 12945:2014+A1:2016) 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of an identical text or by endorsement, at the latest by April 2017 and conflicting national standards shall be withdrawn at the latest by April 2017.

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 includes Amendment 1 approved by CEN on 11 June 2016.

This document supersedes ▌A1⟩ EN 12945:2014 ⟨A1▌.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

The following changes ▌A1⟩ had been made to the former edition EN 12945:2008 ⟨A1▌:

a) scope modified taking into account that method A is not applicable to liming materials with more than 3 % P_2O_5 and that method B is applicable to all liming materials;

b) reference to EN 14984 added to the scope and the Bibliography;

c) 9.2 amended by addition of an instruction concerning the use of correction factors;

d) optional requirement concerning correction factors added to Clause 11 Test report;

e) corrigendum EN 12945:2008/AC:2009 included;

f) editorially revised.

▌A1⟩ The following changes were made to the previous edition EN 12945:2014:

g) Clause 9 modified taking into account that the neutralizing value may be expressed as CaO-equivalents or alternatively as HO--equivalents;

h) Annex B with conversion factors between CaO and HO- added;

i) Bibliography revised;

j) document editorially revised. ⟨A1▌

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Two different procedures are described (method A and method B) because the titration to pH 7,0 is not applicable to silicate liming materials due to the precipitation of compounds at this pH value.

In method B the turning point at pH 4,8 on the titration curve is taken as the end-point of the titration. For carbonaceous liming materials the difference in the consumption of sodium hydroxide solution for back titration between the titration end-points of pH 4,8 and pH 7,0 is negligible.

1 Scope

This European Standard specifies two methods for the determination of the neutralizing value (NV) of liming materials.

Method A is applicable to all liming materials except silicate liming materials.

Method B is applicable to all liming materials.

Both methods do not correctly take into account the potential neutralizing value of material containing more than 3 % P_2O_5. For a more accurate agronomic assessment of products containing more than 3 % P_2O_5 determine the liming efficiency according to EN 14984.

NOTE The methods described in ISO 6598 [1] and ISO 7497 [2] can be used for the determination of P_2O_5 content. Further information on P analyses is given in [3] and [4].

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 12944-3:2001, *Fertilizers and liming materials — Vocabulary — Part 3: Terms relating to liming materials*

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

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 12944-3:2001 apply.

4 Principle

Dissolution of the sample in a specified quantity of hydrochloric acid standard solution. Determination of the excess acid by back titration with a sodium hydroxide standard solution.

5 Reagents

During the analysis, unless otherwise stated, use only reagents of recognised analytical grade.

NOTE Commercially available solutions can be used.

5.1 Water, according to EN ISO 3696, grade 3.

5.2 Hydrochloric acid standard solution, c(HCl) = 0,5 mol/l.

Determine the exact concentration of the solution by titration with sodium hydroxide standard solution (5.3) using phenolphthalein solution (5.4) as indicator. Apply the appropriate correction factor in the calculation of the results (see Clause 9).