VÄETISED. BOORI (SISALDUSEGA > 10 %) MÄÄRAMINE ATSIDIMEETRILISE TIITRIMISE ABIL

Fertilizers - Determination of boron in concentrations > 10 % using acidimetric titration

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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NATIONAL FOREWORD

See Eesti standard EVS-EN 17042:2018 sisaldab Euroopa standardi EN 17042:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 17042:2018 consists of the English text of the European standard EN 17042:2018.
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 13.06.2018.	Date of Availability of the European standard is 13.06.2018.
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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EUROPEAN STANDARD

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English Version

Fertilizers - Determination of boron in concentrations > 10 % using acidimetric titration

Engrais - Dosage du bore dans des concentrations > 10 % par titrage acidimétrique

Düngemittel - Bestimmung von Bor in Konzentrationen > 10 % durch azidimetrische Titration

This European Standard was approved by CEN on 26 February 2018.

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European foreword

This document (EN 17042:2018) 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of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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

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Introduction

The preparation of this document by CEN is based on a mandate by the European Commission and the European Free Trade Association (Mandate M/335), concerning the modernization of methods of analysis of fertilizers in the framework of Regulation (EC) No 2003/2003 [1].

This European Standard is part of a modular approach and concerns the analytical measurement step. "Modular" means that a test standard concerns a specific step in assessing a property and not the whole chain of measurement.

The determination of boron in fertilizers can be executed by inductively coupled plasma-atomic emission spectrometry (ICP-AES). Acidimetric determination after addition of mannitol is more labour intensive but it is an option when ICP-AES is not available.

WARNING — Persons using this European Standard should be familiar with normal laboratory practice. This European Standard does not purport to address all of the safety issues, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this European Standard are carried out by suitably trained staff.

1 Scope

This European Standard specifies a method for the determination of total and water extractable boron in mineral fertilizers containing more than 10 % boron.

This method is applicable to water and aqua regia fertilizer extracts obtained according to EN 16962 and/or EN 16964.

NOTE A method used for the determination of boron in mineral fertilizers containing less than or equal to 10 % of boron (spectrophotometric determination by azomethine-H) can be also used for the scope of this method after appropriate dilution of the extracts.

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 12944-1, *Fertilizers and liming materials and soil improvers - Vocabulary - Part 1: General terms*

EN 12944-2, *Fertilizers and liming materials and soil improvers - Vocabulary - Part 2: Terms relating to fertilizers*

EN 16962, *Fertilizers - Extraction of water soluble micro-nutrients in fertilizers and removal of organic compounds from fertilizer extracts*

EN 16964, *Fertilizers - Extraction of total micro-nutrients in fertilizers using aqua regia*

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

3 Terms and definitions

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

4 Principle

Boric acid forms a complex with mannitol: $H_3BO_3 + C_6H_{14}O_6 \rightarrow C_6H_{15}O_8B + H_2O$.

This complex acid is titrated with sodium hydroxide solution to a pH of 6,3.

5 Sampling and sample preparation

Sampling is not part of this European Standard. A recommended sampling method is specified in EN 1482-1 [2].

Sample preparation shall be carried out in accordance with EN 1482-2. The sample extracts shall be prepared in accordance with EN 16962 and/or EN 16964.