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Inorganic fertilizers - Determination of specific micronutrients

Engrais inorganiques - Détermination des oligo-éléments spécifiques

Anorganische Düngemittel - Bestimmung spezifischer Spurennährstoffe

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (CEN/TS 17754:2022) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

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Introduction

Regulation (EU) 2019/1009 [2] lays down the rules on the making available on the market of EU fertilizing products and the specific safety and quality requirements for the defined product function categories (PFCs). Inorganic fertilizers have been classified into PFC 1(C).

The specific safety and quality requirements in relation to the following specific micronutrients are defined in this document as well as normative references of the test methods to be used in order to measure the compliance with the related requirement in the Regulation (EU) 2019/1009 [2].

1 Scope

This document specifies references to methods for the determination of the content of the following specific micronutrients in inorganic fertilizers:

— the total boron content;

— the total cobalt content;

— the total copper and zinc content;

— the total iron content;

— the total manganese content;

— total molybdenum content;

— the water-soluble boron content;

— the water-soluble cobalt content;

— the water-soluble copper content;

— the water-soluble iron content;

— the water-soluble manganese content;

— the water-soluble molybdenum content;

— the water-soluble zinc content;

— the sum of declared micronutrients in compound micronutrient fertilizers.

This document is applicable to EU fertilizing products classified as PFC 1(C) and PFC 7 as long as the blend only consists of EU fertilizing products classified as PFC 1(C), PFC 2 and PFC 5 as specified in the Regulation (EU) 2019/1009 [2].

An overview of the references to methods for the determination of the specific micronutrients is given in Table 1.

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 1482-1:2007, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*

EN 1482-2:2007, *Fertilizers and liming materials — Sampling and sample preparation — Part 2: Sample preparation*

EN 1482-3:2016, *Fertilizers and liming materials — Sampling and sample preparation — Part 3: Sampling of static heaps*

EN 12944-1:1999,[1] *Fertilizers and liming materials — Vocabulary — Part 1: General terms*

EN 12944-2:1999,[2] *Fertilizers and liming materials — Vocabulary — Part 2: Terms relating to fertilizers*

EN 16962:2018, *Fertilizers — Extraction of water soluble micro-nutrients in fertilizers and removal of organic compounds from fertilizer extracts*

EN 16963:2018, *Fertilizers — Determination of boron, cobalt, copper, iron, manganese, molybdenum and zinc using ICP-AES*

EN 16964:2018, *Fertilizers — Extraction of total micro-nutrients in fertilizers using aqua regia*

EN 16965:2018, *Fertilizers — Determination of cobalt, copper, iron, manganese and zinc using flame atomic absorption spectrometry (FAAS)*

EN 17041:2018, *Fertilizers — Determination of boron in concentrations ≤ 10 % using spectrometry with azomethine-H*

EN 17042:2018, *Fertilizers — Determination of boron in concentrations > 10 % using acidimetric titration*

EN 17043:2018, *Fertilizers — Determination of molybdenum in concentrations ≤ 10 % using spectrometry of a complex with ammonium thiocyanate*

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.

ISO and IEC maintain terminological 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 Sampling and sample preparation

4.1 Sampling

Samples taken for quality control purposes shall be representative, as described in EN 1482-1:2007. Sampling of static heaps shall be performed according to EN 1482-3:2016.

4.2 Sample preparation

The sample preparation for quality control purposes shall be performed according to EN 1482-2:2007.

[1] As impacted by EN 12944-1:1999/AC:2000.
[2] As impacted by EN 12944-2:1999/AC:2000.