PD CEN/TS 17778:2022

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Organic and organo-mineral fertilizers — Determination of the chromium (VI) content by chromotography

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The UK participation in its preparation was entrusted to Technical Committee CII/37, Fertilisers and related chemicals.

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Published by BSI Standards Limited 2022

ISBN 978 0 580 17907 1

ICS 65.080

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 June 2022.

Amendments/corrigenda issued since publication

Date	Text affected

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 17778

April 2022

ICS 65.080

English Version

Organic and organo-mineral fertilizers - Determination of the chromium (VI) content by chromotography

Engrais organiques et organo-minéraux - Détermination de la teneur en chrome(VI)

Organische und organisch-mineralische Düngemittel - Bestimmung des Gehaltes an Chrom (VI)

This Technical Specification (CEN/TS) was approved by CEN on 13 March 2022 for provisional application.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (CEN/TS 17778:2022) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

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 standardisation request given to CEN by the European Commission and the European Free Trade Association.

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

Regulation (EU) 2019/1009 [3] 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). Organic and organo-mineral fertilizers have been classified as PFC 1(A) and PFC 1(B).

This document defines test methods for the determination of the chromium (VI) content to be used for organic and organo-mineral fertilizers in order to measure the compliance with the related requirement in the Regulation (EU) 2019/1009 [3].

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1 Scope

This document is applicable to fertilizing products, which are classified as PFC 1(A) and PFC 1(B) or the PFC 1(A) and PFC 1(B) component in PFC 7 of Regulation (EU) 2019/1009 [3]. However, the present method was not validated on blends.

This document specifies a method for the determination of hexavalent chromium (chromium (VI)) in organic and organo-mineral fertilizers.

The method described is suitable to quantify the chromium (VI) content in organic and organo-mineral fertilizers down to 2 mg/kg dry matter.

The results obtained from this method are strictly dependent on the extraction conditions. Results obtained by using other extraction procedures (extraction solution, pH of the extraction solution, extraction time, extraction temperature, etc.) are not comparable with the results produced by the procedure described in this document.

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 ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

CEN/TS 17773:2022, *Organic and organo-mineral fertilizers — Determination of the dry matter content*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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

3.1
Chromium (VI) content
amount of chromium (VI) in organic and organo-mineral fertilizers determined after extraction with an aqueous salt solution at pH 7,0 to pH 8,0.

Note 1 to entry: The chromium (VI) content is reported as chromium (VI) in milligrams per kilogram (mg/kg), expressed as the dry mass of the sample.

[SOURCE: EN ISO 17075-2:2017, 3.1, modified: "leather" is replaced by "organic and organo-mineral fertilizers" and "pH 7,0 to 8,0" is replaced by "pH 7,0 to pH 8,0"]

4 Principle

Extractable chromium (VI) is leached from the sample in phosphate buffer at pH 7,0 to pH 8,0. An aliquot of the filtered extract is analysed for chromium (VI) using ion-exchange chromatography with UV-VIS detection.

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