PD CEN/TS 17779:2022

BSI Standards Publication

# Organo-mineral fertilizers — Extraction of phosphorus, which is soluble in neutral ammonium citrate



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# National foreword

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

A list of organizations represented on this committee can be obtained on request to its committee manager.

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

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# CEN/TS 17779

April 2022

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English Version

# Organo-mineral fertilizers - Extraction of phosphorus, which is soluble in neutral ammonium citrate

Engrais organo-minéraux - Extraction du phosphore, qui est soluble dans le citrate d'ammonium neutre

Organisch-mineralische Düngemittel - Extraktion von Phosphor, der in neutralem Ammoniumcitrat (NAC) löslich ist, zur anschließenden Bestimmung von P durch ICP-AES

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

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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## European Foreword

This document (CEN/TS 17779:2022) has been prepared by the Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN

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

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## 1 Scope

This document specifies a method for the extraction of phosphorus soluble in neutral ammonium citrate.

The method is applicable to organo-mineral fertilizers.

## 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.

CEN/TS 17774, *Organic and organo-mineral fertilizers — Determination of the content of specific elements by ICP-AES after extraction by water*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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 Principle

The principle is to perform the extraction of phosphorus at a temperature of 65 °C using a neutral ammonium citrate solution of pH = 7 under the specified conditions.

## 5 Sampling

Sampling should be performed carefully, following the principle described in EN 1482 (all parts) with appropriate adaptations, required to account for specificities of organo-mineral fertilizers.

## 6 Reagents

### 6.1 Water.

**6.2 Neutral ammonium citrate solution,** pH = 7, containing 185 g crystallized citric acid per litre, specific gravity 1,09 at 20 °C.

Prepare the reagent as follows:

Dissolve 370 g of crystalline citric acid ($C_6H_8O_7 \cdot H_2O$) in about 1,5 l of water and make an approximately neutral solution by adding 345 ml of ammonium hydroxide solution (28 % to 29 % of $NH_3$). If the $NH_3$ concentration is lower than 28 % add a correspondingly larger quantity of ammonium hydroxide solution and dilute the citric acid in correspondingly smaller quantities of water.

Cool and make exactly neutral by keeping the electrodes of a pH-meter immersed in the solution. Add the ammonia, at 28 % to 29 % of $NH_3$, drop by drop, stirring continuously (with a mechanical stirrer) until obtaining exactly a pH of 7 at a temperature of 20 °C. At this point make up the volume to 2 l and check the pH again. Keep the reagent in a closed container and check the pH at regular intervals.