PD CEN/TS 16317:2012

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Fertilizers — Determination of trace elements — Determination of arsenic by inductively coupled plasma-atomic emission spectrometry (ICP-AES) after aqua regia dissolution

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

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English Version

Fertilizers - Determination of trace elements - Determination of arsenic by inductively coupled plasma-atomic emission spectrometry (ICP-AES) after aqua regia dissolution

Engrais - Dosage des éléments trace - Détermination de l'arsenic par spectrométrie d'émission atomique avec plasma induit par haute fréquence (ICP-AES) après digestion à l'eau régale

Düngemittel - Bestimmung von Elementspuren - Bestimmung von Arsen mit Atomemissionsspektrometrie mit induktiv gekoppeltem Plasma (ICP-AES) nach Königswasseraufschluss

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Foreword

This document (CEN/TS 16317:2012) 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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1 Scope

This Technical Specification specifies a method for the determination of the content of arsenic in fertilizers using inductively coupled plasma-atomic emission spectrometry (ICP-AES) after aqua regia dissolution. Limits of quantification are dependent on the sample matrix as well as on the instrument, but can roughly be expected to be 1,5 mg/kg for As.

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 12944-1:1999, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 1: General terms*

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

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 12944-1:1999 and EN 12944-2:1999 apply.

4 Principle

Arsenic is extracted from the sample with aqua regia and conventional boiling. The concentration in the extract is measured by inductively coupled plasma–atomic emission spectrometry (ICP-AES) with axial or radial viewing.

5 Sampling and sample preparation

Sampling is not part of the methods specified in this Technical Specification. A recommended sampling method is given in EN 1482-1.

Sample preparation shall be carried out in accordance with EN 1482-2.

6 Reagents

Use only reagents of recognized analytical grade.

Commercially available stock solutions shall be replaced according to the specifications from the supplier or after one year if prepared in the laboratory from available salts. Standard solutions shall be renewed monthly as a general rule.

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