

## **Tahked väetised ja lubiväetised. Kaadmiumisisalduse määramine**

Fertilizers and liming materials - Determination of  
cadmium content

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14888:2005 sisaldab Euroopa standardi EN 14888:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.09.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14888:2005 consists of the English text of the European standard EN 14888:2005.</p> <p>This document is endorsed on 29.09.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This European Standard specifies two methods for the determination of the cadmium content, after extraction with nitric acid, of solid mineral fertilizers and rock phosphates.</p>	<p><b>Scope:</b> This European Standard specifies two methods for the determination of the cadmium content, after extraction with nitric acid, of solid mineral fertilizers and rock phosphates.</p>
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ICS 65.080

Võtmesõnad:

ICS 65.080

English version

Fertilizers and liming materials - Determination of cadmium  
content

Engrais et amendements minéraux basiques - Dosage du  
cadmium

Düngemittel und Calcium-/Magnesium-  
Bodenverbesserungsmittel - Bestimmung des  
Cadmiumgehaltes

This European Standard was approved by CEN on 27 June 2005.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN 14888:2005) 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of an identical text or by endorsement, at the latest by February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilizers.

Once this standard is cited in the Official Journal of the European Communities under that Regulation and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Regulation and associated EFTA regulations.

**WARNING** — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## Introduction

Because flame atomic absorption spectrometry (flame AAS) and inductively coupled plasma-optical emission spectrometry (ICP-OES) are widely used techniques for the determination of cadmium, both are described in this European Standard (as method A and method B respectively). Much of the procedure and many of the reagents are common to both methods.

## 1 Scope

This European Standard specifies two methods for the determination of the cadmium content, after extraction with nitric acid, of solid mineral fertilizers and rock phosphates. It is not applicable to organic and organo-mineral fertilizers. It is applicable to the determination of cadmium contents greater than 1 mg/kg.

## 2 Normative references

The following referenced documents are indispensable for the application 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, *Sampling of solid fertilizers and liming materials*

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

## 3 Terms and definitions

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

### 3.1

#### limit of detection

smallest measured content from which it is possible to deduce the presence of the analyte with reasonable statistical certainty

NOTE The limit of detection is numerically equal to three times the standard deviation of the mean of blank determinations ( $n > 10$ , where  $n$  is the number of measurements).

### 3.2

#### limit of quantification

lowest content of the analyte which can be measured with reasonable statistical certainty

NOTE If both accuracy and precision are constant over a concentration range around the limit of detection, then the limit of quantification is numerically equal to ten times the standard deviation of the mean of blank determinations ( $n > 10$ , where  $n$  is the number of measurements).

## 4 Principle

The cadmium is extracted from the fertilizer by means of a nitric acid digestion. Its concentration is measured either by flame atomic absorption spectrometry (Flame-AAS) (Method A) or by inductively coupled plasma-optical emission spectrometry (ICP-OES) (Method B). Both methods are relative techniques. Cadmium concentrations are determined by the standard addition method.