

Advanced technical ceramics - Test methods for ceramic powders - Determination of calcium, magnesium, iron and aluminium in silicon nitride by using flame atomic absorption spectroscopy (FAAS) or inductively coupled plasma atomic emission spectroscopy (ICP-AES)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-ENV 14226:2010 sisaldab Euroopa standardi ENV 14226:2002 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.09.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 17.04.2002.

Standard on kättesaadav Eesti standardiorganisatsioonist.

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This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

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English version

Advanced technical ceramics - Test methods for ceramic
powders - Determination of calcium, magnesium, iron and
aluminium in silicon nitride by using flame atomic absorption
spectroscopy (FAAS) or inductively coupled plasma atomic
emission spectroscopy (ICP-AES)

Céramiques techniques avancées - Méthodes d'essai pour
poudres céramiques - Détermination du calcium,
magnésium, fer, et aluminium dans le nitrure par
spectrométrie d'absorption atomique dans la flamme
(FAAS) ou par spectrométrie d'émission atomique avec
plasma à couplage inductif (ICP-AES)

Hochleistungskeramik - Prüfverfahren für keramische
Pulver - Bestimmung von Calcium, Magnesium, Eisen und
Aluminium in Siliciumnitrid mittels Flammen-
Atomabsorptionsspektroskopie (FAAS) oder
Atomemissionsspektroskopie mit induktiv gekoppeltem
Plasma (ICP-AES)

This European Prestandard (ENV) was approved by CEN on 23 December 2001 as a prospective standard for provisional application.

The period of validity of this ENV 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 ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document ENV 14226:2002 has been prepared by Technical Committee CEN/TC 184 “Advanced technical ceramics”, the secretariat of which is held by BSI.

This Prestandard includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Prestandard specifies methods for the determination of calcium, magnesium, iron, and aluminium, using flame atomic absorption spectroscopy (FAAS), or inductively coupled plasma atomic emission spectroscopy (ICP-AES).

The methods are applicable to the concentration ranges given in clause 3.

2 Normative references

This European Prestandard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO 3696, *Water for analytical laboratory use - Specification and test methods*.

3 Concentration ranges

The method is applicable to concentration ranges for each element as follows:

Calcium	5×10^{-6} to 500×10^{-6} (w/w);
Magnesium	5×10^{-6} to 200×10^{-6} (w/w);
Iron	5×10^{-6} to 250×10^{-6} (w/w);
Aluminium	5×10^{-6} to 1000×10^{-6} (w/w).

4 Principle

The test sample is decomposed using either acid pressure digestion, or acid pressure microwave digestion.

The resulting solution is diluted to a defined volume and nebulization into a flame for FAAS, or into a plasma, for ICP-AES (see clause 1).

For each element, comparison is made of the recorded absorbance or emitted intensity for a determined analytical peak with those of a range of solutions of known concentrations.

5 Sampling

Bulk sampling is not within the scope of this European Prestandard and the method starts with a laboratory sized sample.