

**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)**

ICS 81.060.30

National foreword

This Draft for Development is the official English language version of ENV 14226:2002.

This publication is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature because it is considered that further experience is required in its application before it is converted into a European and hence British Standard. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee RPI/13, Advanced technical ceramics, at 389 Chiswick High Road, London W4 4AL, giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

This Draft for Development, having been prepared under the direction of the Materials and Chemicals Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 20 May 2002

Summary of pages

This document comprises a front cover, an inside front cover, the ENV title page, pages 2 to 11, and a back cover.

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English version

Advanced technical ceramics - Test methods for ceramic
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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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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.

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.