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**Kemijska analiza borovega (III) oksida v ognjevzdržnih izdelkih - 2. del: Metoda kislinske ekstrakcije ugotavljanja borovega (III) oksida v vezivnih sestavinah (ISO 21078-2:2006)**

Determination of boron(III) oxide in refractory products - Part 2: Acid extraction method for the determination of boron(III) oxide in binder components (ISO 21078-2:2006)

Bestimmung des Gehaltes an Bor(III)-oxid in feuerfesten Erzeugnissen — Teil 2: Säureextraktionsverfahren zur Bestimmung des Bor(III)-oxid-Gehaltes in Binderkomponenten (ISO 21078-2:2006)

Dosage de l'oxyde de bore(III) dans les produits réfractaires - Partie 2: Méthode d'extraction acide pour le dosage de l'oxyde de bore(III) dans les composants de liant (ISO 21078-2:2006)

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ICS 81.060.01; 81.040.01

English Version

Determination of boron(III) oxide in refractory products - Part 2:  
Acid extraction method for the determination of boron(III) oxide  
in binder components (ISO 21078-2:2006)

Dosage de l'oxyde de bore(III) dans les produits réfractaires  
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Bestimmung des Bor(III)-oxid-Gehaltes in  
Binderkomponenten (ISO 21078-2:2006)

This European Standard was approved by CEN on 16 September 2007.

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## Foreword

The text of ISO 21078-2:2006 has been prepared by Technical Committee ISO/TC 33 "Refractories" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 21078-2:2007 by Technical Committee CEN/TC 187 "Refractory products and materials", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

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

### Endorsement notice

The text of ISO 21078-2:2006 has been approved by CEN as EN ISO 21078-2:2007 without any modifications.

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**Determination of boron(III) oxide in  
refractory products —**

Part 2:

**Acid extraction method for the  
determination of boron(III) oxide in binder  
components**

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(standards.iteh.ai) *Dosage de l'oxyde de bore(III) dans les produits réfractaires —*

*Partie 2: Méthode d'extraction acide pour le dosage de l'oxyde de  
bore(III) dans les composants de liant*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21078-2 was prepared by Technical Committee ISO/TC 33, *Refractories*.

ISO 21078 consists of the following parts, under the general title *Determination of boron(III) oxide in refractory products*:

- *Part 1: Determination of total boric oxide in oxidic materials for ceramics, glass and glazes*
- *Part 2: Acid extraction method for the determination of boron(III) oxide in binder components*

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# Determination of boron(III) oxide in refractory products —

## Part 2:

# Acid extraction method for the determination of boron(III) oxide in binder components

## 1 Scope

This part of ISO 21078 specifies procedures of chemical analysis for the determination of boron(III) oxide used as a binder component added to aluminosilicate refractories, using an acid extraction method.

It is applicable for refractories containing less than 1 % (mass fraction) of boron(III) oxide.

## 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.

ISO 31-0, *Quantities and units — Part 0: General principles*

ISO 836, *Terminology for refractories* [SIST EN ISO 21078-2:2008](https://standards.iteh.ai/catalog/standards/sist/210f9369-85e0-41e3-af95-9ef29abc0ffa/sist-en-iso-21078-2-2008)

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 836 and the following apply.

### 3.1

#### dry unshaped refractories

dry particles and/or powder of unshaped refractories

## 4 Preparation of the test sample

### 4.1 Refractory brick or its raw material

Sampling is carried out in accordance with the contract between the user and producer. A specified quantity taken from a lot of the sample is crushed to pass through a 6,7 mm sieve (see ISO 3310-1) and reduced to about 100 g by riffing or quartering. Then all the reduced sample is ground to pass through a 300 µm sieve (see ISO 3310-1).

### 4.2 Unshaped refractories

Prepare two approximately 100 g portions of the sample for analysis (both dry and wet), and crush to pass through a 300 µm sieve (see ISO 3310-1), in accordance with the following procedure in 4.3 to 4.5.