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Magnesiidid ja dolomiidid. Keemiline analüüsimine

Magnesites and dolomites - Chemical analysis

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10058:2000 sisaldab Euroopa standardi EN ISO 10058:1996 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10058:2000 consists of the English text of the European standard EN ISO 10058:1996.</p> <p>This document is endorsed on 11.01.2000 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>Käsitlusala: Standard määrab kindlaks meetodid ränidioksiidi, alumiiniumoksiidi, titaandioksiidi, raud(III)oksiidi ja mangaan-, kroom-, kaltsium-, magneesium-, naatrium-, kaalium- ja liitiumoksiidi sisalduse määramiseks. Standard määrab kindlaks ka meetodid magnesiidi ja dolomiidi ning nendest toormaterjalidest saadud kuumuskindlate materjalide kuumutuskao määramiseks. Lisas A esitatakse meetod boorisalduse määramiseks ainult magnesiitides. MÄRKUS: keemiliste analüüside jaoks kasutatakse üha rohkem füüsikalisi meetodeid. Käesoleval ajal pole võimalik esitada standardset testimismeetodit.</p>	<p>Scope:</p>
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ICS 73.080

Võtmesõnad: dolomiit (mineraal), keemiline analüüs, kuumuskindlad materjalid, kuumutuskao, sisalduse määramine, toormaterjalid

ICS 81.080

Descriptors: Magnesite, dolomite, analysis, refractory materials.

English version

Magnesites and dolomites

Chemical analysis
(ISO 10058:1992)

Produits de magnésie et de dolomie;
analyse chimique (ISO 10058:1992)

Magnesit und Dolomit; chemische Ana-
lyse (ISO 10058:1992)

This European Standard was approved by CEN on 1995-12-08 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

International Standard

ISO 10058:1992 Magnesites and dolomites; chemical analysis,

which was prepared by ISO/TC 33 'Refractories' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 187 'Refractory products and materials' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by July 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 10058:1992 was approved by CEN as a European Standard without any modification.

1 Scope

This International Standard specifies methods for the determination of silica, alumina, titania, iron oxide and oxides of manganese, chromium, calcium, magnesium, sodium, potassium and lithium. It also specifies methods for determining the loss on ignition of magnesite and dolomite, and of refractories based on these raw materials.

Annex A describes a method for the determination of the boron content of magnesites only.

NOTE 1 Physical methods are used increasingly for chemical analysis. At present, it is not possible to describe a standardized test method, because the type of apparatus used is important.

2 Dissolution and determination of silica

2.1 Principle

Decompose the sample with hydrochloric acid and separate the silica by coagulation with a polyethylene oxide solution. Filter, wash the residue, heat and weigh it, and submit it to a treatment with hydrofluoric and sulfuric acids. After this treatment, weigh the remaining residue again and fuse it in sodium carbonate and boric acid. It is then dissolved in the filtrate from the silica, and the solution is diluted to a standard volume to obtain the stock solution (A) of the sample.

In an aliquot, the small quantity of silica not separated by coagulation is subsequently determined by a spectrophotometric method based on the formation of molybdenum blue, using alternatively iron(II) sulfate or tin(II) chloride as a reducing agent. The absorbance maximum of the reduced silico-molybdate complex lies at a wavelength of 810 nm.

2.2 Reagents

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

2.2.1 Sodium carbonate, anhydrous.

2.2.2 Boric acid, powdered.

2.2.3 Polyethylene oxide solution, 2,5 g/l.

Add 0,5 g of polyethylene oxide to 200 ml of water while stirring slowly, preferably with a mechanical stirrer, until dissolved. Discard after 2 weeks.

2.2.4 Accelerator granules, ashless, of mass about 1 g.

2.2.5 Hydrochloric acid, concentrated, $\rho = 1,19$ g/ml.

2.2.6 Hydrochloric acid, diluted 1 + 19.

Add 1 volume of hydrochloric acid (2.2.5) to 19 volumes of water.

2.2.7 Sulfuric acid, concentrated, $\rho = 1,84$ g/ml.

2.2.8 Hydrofluoric acid, 40 % (m/m).

2.3 Apparatus

Usual laboratory apparatus and the following.

2.3.1 Sand bath or hot plate.

2.3.2 Muffle furnace, capable of being controlled at 1 180 °C to 1 200 °C.

2.3.3 Platinum crucible.