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Kemijska analiza surovin in ognjevzdrģnih izdelkov s silicijevim karbidom - 3.del: Doloļ evanje duģika, kisika in kovin in oksidnih sestavin (ISO 21068-3:2008)

Chemical analysis of silicon-carbide-containing raw materials and refractory products - Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents (ISO21068 -3:2008)

Chemische Analyse von Siliciumcarbid enthaltenden Rohstoffen und feuerfesten Erzeugnissen - Teil 3: Bestimmung des Gehaltes an Stickstoff, Sauerstoff sowie metallenen und oxidischen Bestandteilen (ISO 21068-3:2008)

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Analyse chimique des matières premières et des produits réfractaires contenant du carbure de silicium - Partie 3: Dosage de l'azote, de l'oxygène et des constituants métalliques et oxydés (ISO 21068-3:2008)

Ta slovenski standard je istoveten z: EN ISO 21068-3:2008

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81.080	Ognjevzdržni materiali	Refractories

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Chemical analysis of silicon-carbide-containing raw materials and refractory products - Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents (ISO 21068-3:2008)

Analyse chimique des matières premières et des produits réfractaires contenant du carbure de silicium - Partie 3: Dosage de l'azote, de l'oxygène et des constituants métalliques et oxydés (ISO 21068-3:2008)

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Foreword

This document (EN ISO 21068-3:2008) has been prepared by Technical Committee ISO/TC 33 "Refractories" in collaboration with 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of an identical text or by endorsement, at the latest by February 2009, and conflicting national standards shall be withdrawn at the latest by February 2009.

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INTERNATIONAL STANDARD

ISO 21068-3

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Chemical analysis of silicon-carbide-containing raw materials and refractory products —

Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents

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Analyse chimique des matières premières et des produits réfractaires contenant du carbure de silicium —

Partie 3: Dosage de l'azote, de l'oxygène et des constituants métalliques et oxydés

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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.

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ISO 21068-3 was prepared by Technical Committee ISO/TC 33, *Refractories.*

ISO 21068 consists of the following parts, under the general title *Chemical analysis of silicon-carbide-containing raw materials and refractory products*:

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— *Part 1: General information and sample preparation*

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— *Part 2: Determination of loss on ignition, total carbon, free carbon and silicon carbide, total and free silica and total and free silicon*

— *Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents*

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Introduction

ISO 21068, Parts 1 to 3, have been developed from the combination of a Japanese standard JIS 2011 [8] and work items originally developed within CEN. Because there is a wide variety of laboratory equipment in use, the most commonly used methods are described.

This part of ISO 21068 is applicable to the analysis of all refractory products as classified in ISO 10081 (all parts) [3], [4], [5], [6] (shaped) and ISO 1927 [1] (unshaped) and raw materials containing carbon and/or silicon carbide. Therefore, this part of ISO 21068 covers the full range of analysis from pure silicon carbide to oxidic refractory composition with a low content of silicon carbide and/or nitrides. Primarily, this part of ISO 21068 provides methods to distinguish between different carbon bound types like total carbon (C_{total}) and free carbon (C_{free}) and derives from these two the silicon carbide content.

If free carbon is present, this part of ISO 21068 includes different types of temperature treatment in order to determine the mass changes gravimetrically. Frequently, the resulting residue is used for other determinations.

The determination of other groups of analytes described in this part of ISO 21068 are free metals, free silicon (Si_{free}), free aluminum (Al_{free}), free magnesium (Mg_{free}), free iron (Fe_{free}) and the group of oxides from main to trace components.

This part of ISO 21068 also describes the chemical analysis of SiO_2, total Si, oxygen and nitrogen and other oxidic bound metals which typically occur in the materials.

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This part of ISO 21068 represents a listing of analytical methods which is approximately structured according to material composition. However, it is still the user who should prove the applicability of the method depending on the material and analytical requirements.

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Chemical analysis of silicon-carbide-containing raw materials and refractory products —

Part 3:
Determination of nitrogen, oxygen and metallic and oxidic constituents

1 Scope

This part of ISO 21068 specifies methods for the determination of total nitrogen and nitrogen calculated as silicon nitride, total oxygen, and free metallic and oxidic components in silicon carbide raw materials and refractory products.

It applies only to silicon carbide materials that are not bonded with nitrogen. Nitride-bonded silicon carbide refractories are covered in EN 12698-1.

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2 Normative references

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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 10058-1, *Chemical analysis of magnesite and dolomite refractory products (alternative to the X-ray fluorescence method) — Part 1: Apparatus, reagents, dissolution and gravimetric silica*

ISO 10058-2, *Chemical analysis of magnesite and dolomite refractory products (alternative to the X-ray fluorescence method) — Part 2: Wet chemical analysis*

ISO 10058-3, *Chemical analysis of magnesite and dolomite refractory products (alternative to the X-ray fluorescence method) — Part 3: Flame atomic absorption spectrometry (FAAS) and inductively coupled plasma emission spectrometry (ICP-AES)*

ISO 12677, *Chemical analysis of refractory products by XRF — Fused cast bead method*

ISO 20565-1, *Chemical analysis of chrome-bearing refractory products and chrome-bearing raw materials (alternative to the X-ray fluorescence method) — Part 1: Apparatus, reagents, dissolution and gravimetric silica*

ISO 20565-2, *Chemical analysis of chrome-bearing refractory products and chrome-bearing raw materials (alternative to the X-ray fluorescence method) — Part 2: Wet chemical analysis*

ISO 20565-3, *Chemical analysis of chrome-bearing refractory products and chrome-bearing raw materials (alternative to the X-ray fluorescence method) — Part 3: Flame atomic absorption spectrometry (FAAS) and inductively coupled plasma emission spectrometry (ICP-AES)*

ISO 21068-1:2008, *Chemical analysis of silicon-carbide-containing raw materials and refractory products — Part 1: General information and sample preparation*

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