INTERNATIONAL STANDARD

ISO 16169

First edition
2018-07

Preparation of silicon carbide and similar materials for analysis by ISO 12677 X-ray fluorescence (XRF) — Fused cast-bead method

Préparation du carbure de silicium et de matériaux similaires en vue d'une analyse par fluorescence de rayons X (FRX) selon l'ISO 12677 — Méthode de la perle fondue

Reference number
ISO 16169:2018(E)

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 33, *Refractories*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Preparation of silicon carbide and similar materials for analysis by ISO 12677 X-ray fluorescence (XRF) — Fused cast-bead method

1 Scope

This document specifies requirements for the preparation of fused beads for the chemical analysis of silicon carbide containing samples using X-ray fluorescence (XRF). The test methods described in this document are for silicon carbide and silicon carbide materials; however, the principles described can be applied to other reduced materials such as boron carbide, boron nitride, ferroalloys, sialons and silicon nitride using the modifications given in Annex A.

Fused cast beads of the samples prepared in accordance with this document are analysed in accordance with ISO 12677.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 12677:2011, *Chemical analysis of refractory products by X-ray fluorescence (XRF) — Fused cast-bead method*

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

ISO 21068-2, *Chemical analysis of silicon-carbide-containing raw materials and refractory products — Part 2: Determination of loss on ignition, total carbon, free carbon and silicon carbide, total and free silica and total and free silicon*

ISO 8656-1, *Refractory products — Sampling of raw materials and unshaped products — Part 1: Sampling scheme*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 General considerations

Silicon carbides and non-oxide materials in general pose special problems in preparation and analysis.

These materials act exothermically on fusion and can easily react with the platinum alloy fusion dishes that are used to contain the reaction. In order to prevent this occurring, either some way of keeping the reaction from the dishes (using two fluxes, one to produce a protective layer and the other to react with the sample) or a different type of flux altogether is required. Sometimes a catalyst such as V_2O_5 might

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