International Standard

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Second edition
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Testing of ceramic materials — Determination of sulfur in non-oxidic ceramic raw materials and ceramic materials —

Part 2: Inductively coupled plasma optical emission spectrometry (ICP-OES) or ion chromatography (IC) after burning in the oxygen flow

Analyse des matériaux céramiques — Dosage du soufre dans les produits et les matières premières céramiques non oxydes —

Partie 2: Spectrométrie d'émission optique par plasma à couplage inductif (ICP-OES) ou chromatographie ionique (IC) après combustion dans le courant d'oxygène

Reference number
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Foreword

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This document was prepared by Technical Committee ISO/TC *33, Refractories*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 187, *Refractory products and materials,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14720-2:2013), which has been technically revised.

The main changes are as follows:

— title of this document revised to better describe its field of application;

— Clause 1 adapted to the new title;

— subclause 9.3 provides additional information on suitable sulfur emission lines;

— in 9.3, 9.4, 11.1 and 11.2, NOTES were transferred into normative paragraphs;

— subclause 11.1 provides additional information on blank measurement;

— in 11.2, the error in the analysis process regarding the extraction of the residue after combustion has been corrected;

— in Clause 12, symbols for variables have been revised according to ISO/IEC requirements.

A list of all parts in the ISO 14720 series can be found on the ISO website.

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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Testing of ceramic materials — Determination of sulfur in non-oxidic ceramic raw materials and ceramic materials —

Part 2:
Inductively coupled plasma optical emission spectrometry (ICP-OES) or ion chromatography (IC) after burning in the oxygen flow

1 Scope

This document specifies a method for the determination of sulfur in non-oxidic ceramic raw materials and ceramic materials, which are completely oxidized at a higher temperature in an oxygen atmosphere, e.g. carbon and graphite materials.

For materials which are not completely oxidizable under these conditions, it is possible to determine sulfur that can be released under these conditions, e.g. the adherent sulfur.

This document is applicable for materials with mass fractions of sulfur ≤ 10 % and mass fractions of ash < 20 %, The defined method is limited for materials with mass fractions of barium < 10 mg/kg, because the sulfur bonded in barium sulfate is not detectable with this method.

For the lower detection limit of this method, a mass fraction of sulfur of 0,5 mg/kg in the case of inductively coupled plasma optical emission spectrometry (ICP-OES) and 5 mg/kg in the case of ion chromatography (IC) can be considered as a practical value.

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 10304-1, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate*

ISO 11885, *Water quality — Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1
sulfur content
mass fraction of inorganic and organic bound sulfur

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