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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46056-2025

**Determination of sulfur in refractory products by gravimetric,
photometric and titrimetric methods**

重量法、光度法和滴定法测定耐火材料中的硫

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 22016:2015 "Determination of sulfur in refractory products and raw materials by gravimetric, spectrophotometric and titration methods".

Compared with ISO 22016:2015, this document has undergone many structural adjustments. A comparison table of the structural numbering changes between the two documents is provided.

See Appendix A.

This document differs significantly from ISO 22016:2015. The relevant clauses are indicated in vertical margins.

The lines (?) are marked. A summary of these technical differences and their reasons can be found in Appendix B.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Determination of Sulfur in Refractory Materials by Gravimetric, Photometric and Titration Methods";

---Figure 2 shows the increased inner diameters of the quartz tube and the absorbing glass tube;

---The statistical analysis of sulfur content in refractory materials has been expanded to include standard sample analysis results using four different analytical methods (see Appendix D).

Annex A of ISO 22016:2015.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Refractory Materials (SAC/TC193).

1 Scope

This document describes the gravimetric, spectrophotometric, and titration methods for determining sulfur, sulfides, sulfates, sulfites, and other substances in refractory materials.

Chemical analysis methods for determining the sulfur content.

This document applies to the determination of sulfur content in refractory materials with a mass fraction of less than 5%.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 603 Preparation of reagents and products used in chemical reagent test methods (GB/T 603-2023, ISO 6353-1.

1982, NEQ)

GB/T 4513.2 Unshaped refractories - Part 2: Sampling GB/T 6682 Specifications and test methods for water used in analytical laboratories GB/T 8170 Rules for rounding off numerical values and the representation and determination of limiting values GB/T 10325 Sampling Inspection Rules for Acceptance of Shaped Refractory Products GB/T 12805

Burettes for Laboratory Glassware GB/T 12806 Laboratory Glassware - Single-mark volumetric flasks GB/T 12808 Laboratory Glassware - Single-mark Pipettes GB/T 17617 Sampling Inspection Rules for Refractory Raw Materials (GB/T 17617-2018, ISO 8656-1:1988, MOD) GB/T 18930 Terminology for Refractory Materials (GB/T 18930-2020, ISO 836:2001, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 18930 apply to this document.

4.1 General Provisions

4.1.1

During analysis, only reagents of approved analytical grade or higher shall be used, along with distilled water or deionized water of grade III or higher as specified in GB/T 6682.

Or water of equivalent purity. The reagent should meet the requirements of GB/T 603.