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

GB/T 47552-2026

**Fine ceramics - Chemical analysis methods of barium titanate
powders**

精细陶瓷 钛酸钡粉体化学分析方法

(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 21813:2019 "Fine ceramics (advanced ceramics, advanced technical ceramics) - Chemical analysis of high-purity barium titanate powder".

Analytical Methods.

Compared with ISO 21813:2019, this document has undergone many structural adjustments. A comparison table of the structural numbering changes between the two documents is provided.

See Appendix A.

The technical differences between this document and ISO 21813:2019, and the reasons therefor, are as follows.

---The phrase "high-purity barium titanate" in the scope has been changed to "barium titanate" (see Chapter 1) to better suit my country's technological conditions;

---ISO 8656-1 (see 5.1) has been replaced with the normatively referenced GB/T 17617 to better suit my country's technical requirements;

---The normative reference GB/T 8170 has been added to standardize numerical rounding (see 6.4) to better adapt to my country's technical requirements.

condition;

---ISO 6353-1 has been replaced by the normatively referenced GB/T 603, GB/T 622, GB/T 625, GB/T 631, and GB/T 6684.

ISO 6353-2 was revised to better suit my country's technical requirements; the normative reference to ISO 6353-3 was removed and is no longer used.

Reagents in ISO 6353-3 (see 7.2.2.1);

---ISO 3696 (see 7.2.2.9) has been replaced with the normatively referenced GB/T 6682 to better suit my country's technical requirements;

---The representation of the content of each element in the blank solution has been changed, with m_0 replacing m_b (see 8.7), because m_b is represented in formula (2).

Indicate the mass of barium and titanium in the blank solution;

---ISO 6353-3 (see 11.2.2.3) has been replaced with the normatively referenced GB/T 15897 to better suit my country's technical requirements.

Require.

The following editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Chemical Analysis Methods for Barium Titanate Powder in Fine Ceramics".

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 by the China Building Materials Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Industrial Ceramics (SAC/TC194).

1 Scope

This document describes a chemical analysis method for barium titanate powder used in fine ceramics.

This document applies to barium, titanium, aluminum, cadmium, calcium, cobalt, dysprosium, iron, lead, magnesium, manganese, nickel, niobium, potassium, and silicon in barium titanate powder for fine ceramics.

Determination of sodium, strontium, vanadium, zirconium, carbon, oxygen, and nitrogen content. This document also applies to the determination of elemental content in fine ceramic barium titanate products.

The content of barium and titanium was determined by acid dissolution-gravimetric method or acid dissolution-inductively coupled plasma optical emission spectrometry (ICP-OES). The acid dissolution-gravimetric method was used to determine the content of barium and titanium.

ICP-OES method for simultaneous determination of aluminum, cadmium, calcium, chromium, cobalt, dysprosium, iron, lead, magnesium, manganese, nickel, niobium, potassium, silicon, strontium, vanadium, and zirconium. Passing through an inert gas...

Nitrogen content was determined by the fusion-thermal conductivity method, and oxygen content was determined by inert gas fusion-infrared absorption spectroscopy. Combustion in an electric resistance furnace followed by infrared absorption was also performed.

Carbon content can be determined by spectroscopic methods, high-frequency combustion-thermal conductivity methods, or high-frequency combustion-infrared absorption spectrometry.

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 622 Chemical Reagents - Hydrochloric Acid (GB/T 622-2006, ISO 6353-2:1983, NEQ) GB/T 625 Chemical Reagent Sulfuric Acid (GB/T 625-2024, ISO 6353-2:1983, NEQ)