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Fine ceramics (advanced ceramics, advanced technical ceramics) - Methods for chemical analysis of high purity barium titanate powders (ISO 21813:2019)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Fine ceramics (advanced ceramics, advanced technical ceramics) - Methods for chemical analysis of high purity barium titanate powders (ISO 21813:2019)

Céramiques techniques - Méthodes d'analyse chimique des poudres de titanate de baryum à haute pureté (ISO 21813:2019)

Hochleistungskeramik - Verfahren zur chemischen Analyse von hochreinen Bariumtitanatpulvern (ISO 21813:2019)

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EN ISO 21813:2022 (E)

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European foreword

The text of ISO 21813:2019 has been prepared by Technical Committee ISO/TC 206 "Fine ceramics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 21813:2022 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

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**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Methods for chemical analysis of high
purity barium titanate powders**

*Céramiques techniques — Méthodes d'analyse chimique des poudres
de titanate de baryum à haute pureté*



Reference number
ISO 21813:2019(E)

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Foreword

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This document was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Methods for chemical analysis of high purity barium titanate powders

1 Scope

This document specifies methods for the chemical analysis of fine high purity barium titanate powders used as the raw material for fine ceramics.

This document stipulates the determination methods of the barium, titanium, aluminium, cadmium, calcium, cobalt, dysprosium, iron, lead, magnesium, manganese, nickel, niobium, potassium, silicon, sodium, strontium, vanadium, zirconium, carbon, oxygen and nitrogen contents in high purity barium titanate powders. The barium and titanium contents, the major elements, are determined by using an acid decomposition-gravimetric method or an acid decomposition-inductively coupled plasma-optical emission spectrometry (ICP-OES) method. The aluminium, cadmium, calcium, chromium, cobalt, dysprosium, iron, lead, magnesium, manganese, nickel, niobium, potassium, silicon, strontium, vanadium and zirconium contents are simultaneously determined via an acid digestion-ICP-OES method. The nitrogen content is determined by using an inert gas fusion-thermal conductivity method, while that of oxygen is determined via an inert gas fusion-IR absorption spectrometry method. Finally, the carbon content is determined using a combustion-IR absorption spectrometry method or a combustion-conductometry method.

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 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 6353-1, *Reagents for chemical analysis — Part 1: General test methods*

ISO 6353-2, *Reagents for chemical analysis — Part 2: Specifications — First series*

ISO 6353-3, *Reagents for chemical analysis — Part 3: Specifications — Second series*

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

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