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| STN | **Jemná keramika (špeciálna keramika, špeciálna technická keramika)<br>Metódy chemickej analýzy práškov nitridu hliníka<br>(ISO 21814: 2019)** | **STN<br>EN ISO 21814**<br><br>72 7501 |
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Fine ceramics (advanced ceramics, advanced technical ceramics) - Methods for chemical analysis of aluminium nitride powders (ISO 21814:2019)

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/23

Obsahuje: EN ISO 21814:2022, ISO 21814:2019

Oznámením tejto normy sa ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN ISO 21814

November 2022

ICS 81.060.30 Supersedes EN 725-4:2006

English Version

# Fine ceramics (advanced ceramics, advanced technical ceramics) - Methods for chemical analysis of aluminium nitride powders (ISO 21814:2019)

Céramiques techniques - Méthodes d'analyse chimique des poudres de nitrure d'aluminium (ISO 21814:2019)

Hochleistungskeramik - Verfahren zur chemischen Analyse von Aluminiumnitridpulvern (ISO 21814:2019)

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



Ref. No. EN ISO 21814:2022 E

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## European foreword

The text of ISO 21814:2019 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 21814:2022 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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## Endorsement notice

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INTERNATIONAL STANDARD

**ISO 21814**

First edition
2019-02

# Fine ceramics (advanced ceramics, advanced technical ceramics) — Methods for chemical analysis of aluminium nitride powders

*Céramiques techniques — Méthodes d'analyse chimique des poudres de nitrure d'aluminium*

Reference number
ISO 21814:2019(E)

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# Foreword

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

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.

 

INTERNATIONAL STANDARD ISO 21814:2019(E)

# Fine ceramics (advanced ceramics, advanced technical ceramics) — Methods for chemical analysis of aluminium nitride powders

## 1 Scope

This document specifies methods for the chemical analysis of fine aluminium nitride powders used as the raw material for fine ceramics.

This document stipulates the determination methods of the aluminium, total nitrogen, boron, calcium, copper, iron, magnesium, manganese, molybdenum, nickel, potassium, silicon, sodium, titanium, tungsten, vanadium, zinc, zirconium, carbon, chlorine, fluorine, and oxygen contents in aluminium nitride powders. The aluminium content is determined by using either an acid pressure decomposition-CyDTA-zinc back titration method or an acid digestion-inductively coupled plasma-optical emission spectrometry (ICP-OES) method. The total nitrogen content is determined by using an acid pressure decomposition-distillation separation-acidimetric titration method, a direct decomposition-distillation separation-acidimetric titration method, or an inert gas fusion-thermal conductivity method. The boron, calcium, copper, iron, magnesium, manganese, molybdenum, nickel, potassium, silicon, sodium, titanium, tungsten, vanadium and zinc contents are determined by using an acid digestion-ICP-OES method or an acid pressure decomposition-ICP-OES method. The sodium and potassium contents are determined via an acid pressure decomposition-flame emission method or an acid pressure decomposition-atomic absorption spectrometry method. The oxygen content is determined by using an inert gas fusion-IR absorption spectrometry method, while that of carbon is determined via a combustion-IR absorption spectrometry method or a combustion-conductometry method. The chlorine and fluorine contents are determined by using a pyrohydrolysation method followed by ion chromatography or spectrophotometry.

## 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 2828, *Aluminium oxide primarily used for the production of aluminium — Determination of fluorine content — Alizarin complexone and lanthanum chloride spectrophotometric method*

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

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

ISO 21068-3:2008, *Chemical analysis of silicon-carbide-containing raw materials and refractory products — Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents*

ISO 21438-2, *Workplace atmospheres — Determination of inorganic acids by ion chromatography — Part 2: Volatile acids, except hydrofluoric acid (hydrochloric acid, hydrobromic acid and nitric acid)*

ISO 21438-3, *Workplace atmospheres — Determination of inorganic acids by ion chromatography — Part 3: Hydrofluoric acid and particulate fluorides*

ISO 26845:2008, *Chemical analysis of refractories — General requirements for wet chemical analysis, atomic absorption spectrometry (AAS) and inductively coupled plasma atomic emission spectrometry (ICP-AES) methods*