

ICS 81.060.30

CCS Q 32



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

GB/T 47610-2026

Aluminium nitride ceramic powder

氮化铝陶瓷粉体

Issued on: May 25, 2026

Implemented on: December 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

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1.Scope This document specifies the grading, requirements, test methods, inspection rules, marking, packaging, transportation and storage of aluminum nitride ceramic powder materials. This document applies to aluminum nitride ceramic powder.

3.Terms and Definitions This document does not contain any terms or definitions that need to be defined.

4.Grading This document classifies aluminum nitride ceramic powder into three grades. Grade I, Grade II, and Grade III, based on powder quality and particle size distribution.

5 Requirements

5.1 Appearance Quality Aluminum nitride ceramic powder is in the form of fine particles, grayish-white in color, and uniform in color.

5.2 Physical Properties The physical property requirements for aluminum nitride ceramic powder are shown in Table 1.

5.3 Chemical composition The chemical composition requirements for aluminum nitride ceramic powder are shown in Table 2.

6 Test Methods

6.1 Test Conditions Unless otherwise specified, all tests are conducted under standard atmospheric conditions, with the following environmental parameters.

---Temperature. 15°C~35°C;

---Relative humidity. 45%~75%;

---Atmospheric pressure. 86kPa~106kPa.

6.2 Appearance The color of aluminum nitride ceramic powder was visually inspected under bright white light.

6.3 Particle size distribution The test shall be conducted according to the method specified in GB/T 19077.

6.4 Specific surface area The test shall be conducted according to the method specified in GB/T 39713.

6.5 Whiteness The test shall be conducted in accordance with the method specified in GB/T 23774.

6.6 Carbon, oxygen, and nitrogen content The test shall be conducted in accordance with the method specified in GB/T 16555.

6.7 Iron, silicon, calcium, and magnesium content The test shall be conducted in accordance with the method specified in GB/T 23942.

6.8 Aluminum content The test shall be conducted in accordance with the method specified in ISO 21814.

7.1 Inspection Classification and Requirements

7.1.1 Inspection is divided into factory inspection and type inspection.

7.1.2 Products may only leave the factory after passing inspection. The factory inspection and type inspection items shall include all items required in Chapter 5.

7.1.3 Type testing shall be conducted under any of the following circumstances.

- a) When new products are being trial-produced or old products are being transferred to another factory for production;
- b) When there are significant changes in materials or processes;
- c) When resuming production after a long period of shutdown;
- d) When there is a significant difference between the factory inspection results and the type inspection results.

7.2 Batching and Sampling Methods

7.2.1 Aluminum nitride ceramic powder produced continuously from the same batch of raw materials and under the same process conditions is considered to be from the same batch.

7.2.2 Randomly sample from the same batch, select 5 sampling points, take out the aluminum nitride ceramic powder, mix them, reduce to 100g for testing.

7.3 Determination of Non-conforming Products

7.3.1 If the appearance inspection does not meet the requirements of 5.1, the batch of products shall be directly deemed unqualified.

7.3.2 If the test results for physical properties and chemical composition are unqualified, twice the number of samples should be taken from the same batch of products for repeated

testing. If repeated testing still yields unqualified results, the batch of products is deemed unqualified.

8.1 Marking

8.1.1 The markings on the product packaging shall comply with the requirements of GB/T 191.

8.1.2 Product markings shall include.

- a) Manufacturer's name, trademark, and address;
- b) Product Name;
- c) Product weight;
- d) Production date or production batch number.

8.2 Packaging The inner packaging should be a moisture-proof and waterproof sealed package, filled with inert gas for protection. The outer packaging should be a pressure-resistant and shock-absorbing package. Materials or frame structure.

8.3 Transportation During transportation, it should be kept dry to prevent rain and moisture, and to avoid impact and vibration.

8.4 Storage It should be stored in a sealed container in a clean, cool, dry, and well-ventilated warehouse, and should be kept away from direct sunlight and acidic or alkaline environments.