ICS 77.150.99
CCS H 61

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 5149-2026

Replacing GB/T 5149.1-2004

Magnesium and magnesium alloy powder

镁及镁合金粉

Issued on: April 30, 2026 **Implemented on: November 1, 2026**

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

Table of Contents

5.1 Particle size distribution, median diameter, and loose packing density

5.1.1 The particle size distribution and loose packing density of milled magnesium powder shall conform to the provisions of Table 2.

5.1.2 The particle size distribution, median diameter (D50), and bulk density of the atomized magnesium powder shall conform to the specifications in Table

3.The particle size distribution and median diameter in the table... (D50) Two indicators, the buyer can only choose one of them when placing an order.

5.1.4 If the buyer has special requirements for particle size distribution, median diameter and loose packing density, the requirements shall be determined through negotiation between the supplier and the buyer and noted in the purchase order.

5.2 Chemical composition

5.2.1 The chemical composition of milling magnesium powder shall conform to the provisions of Table 5.

5.2.2 The chemical composition of atomized magnesium powder shall conform to the provisions of Table 6.

5.2.4 If the buyer has other requirements for the chemical composition, the supplier and the buyer shall negotiate and determine them, and indicate them in the purchase order.

5.3 Moisture The moisture content (mass fraction) of milled magnesium powder and ball-milled aluminum-magnesium alloy powder should not exceed 0.2%, and the moisture content (mass fraction) of atomized magnesium powder should also be... No more than 0.1%.

5.4 Hydrochloric acid insoluble content The hydrochloric acid insoluble content (mass fraction) of milled magnesium powder and atomized magnesium powder should not exceed 0.2%.

5.5 Passivation performance Milled magnesium powder used as a desulfurizing agent in steelmaking should undergo passivation treatment. The passivation process shall be determined through negotiation between the supplier and the buyer. The product after passivation treatment... The performance of the product shall conform to the specifications in Table

8.If the buyer has passivation requirements for other magnesium powders, the supplier and the buyer shall agree on the terms and indicate them in the purchase order.

5.6 Appearance Quality

5.6.1 Magnesium powder produced by milling is in the form of silvery-white/gray flakes. Magnesium powder produced by milling and pulverizing is in the form of granules.

5.6.2 The atomized magnesium powder is in the form of spherical particles, and is silvery-white or silvery-gray in color.

5.6.3 The ball-milled aluminum-magnesium alloy powder is an irregular polyhedron in shape, and is silvery-white or silvery-gray in color.

5.6.4 Magnesium powder should be free of foreign inclusions and lumps that are difficult to sieve due to powder particle adhesion. Trace amounts are permissible in ball-milled aluminum-magnesium alloy powder. Powder lumps.

5.6.5 The magnesium powder after passivation treatment should have a dense coating, but a small amount of passivation powder is allowed, and the color should be grayish-white.

6.1 Particle size distribution, median diameter, and loose packing density

6.1.1 The particle size distribution and median diameter (D50) of magnesium powder were

determined according to the method in Appendix B.

6.1.2 The bulk density of magnesium powder shall be determined according to the method in Appendix C.

6.2 Chemical composition

6.2.1 The determination of aluminum content in magnesium powder shall be carried out in accordance with the method of GB/T 13748.1.

6.2.2 The determination of iron content in magnesium powder shall be carried out in accordance with the method of GB/T 13748.9.

6.2.3 The determination of chloride ion content in magnesium powder shall be carried out in accordance with the method of GB/T 13748.18.

6.2.4 The determination of silicon content in magnesium powder shall be carried out in accordance with the method of GB/T 13748.9.

6.2.5 The determination of copper content in magnesium powder shall be carried out in accordance with the method of GB/T 13748.2.

6.2.6 The determination of the content of active magnesium and active metals (Al Mg) in magnesium powder shall be carried out in accordance with the method in Appendix D.

6.2.7 The method for determining the carbon content in magnesium powder shall be determined through negotiation between the supplier and the buyer and shall be specified in the purchase order.

6.3 Moisture The moisture content in magnesium powder was determined according to the method in Appendix E.

6.4 Content of hydrochloric acid insoluble matter The determination of the hydrochloric acid insoluble content in magnesium powder shall be carried out according to the method in Appendix F.

6.5 Passivation performance

6.5.1 Active magnesium content The determination of active magnesium content shall be carried out according to the method in Appendix D.

6.5.2 Chloride ion content The chloride ion content was determined according to the method in GB/T 13748.18.

6.5.3 Loose packing density The loose density was determined according to the method in Appendix C.

6.5.4 Angle of Repose The angle of repose was determined according to the method of YS/T 56.

6.5.5 Ignition Point Place 10g of passivated magnesium powder in a tray and put it into an oven or a high-temperature furnace with a viewing window. Turn off the oven or furnace and... Turn on the power and start heating. Observe the changes in the magnesium powder. When it starts to burn, read the displayed temperature. This temperature is the ignition point.

6.5.6 Flame retardant time After heating the high-temperature furnace to 1000°C±2°C, quickly open the furnace door and place the tray containing 10g of passivated magnesium powder into the high-temperature furnace within 5 seconds. Open the furnace, quickly close the furnace door, start timing, and observe the changes in the magnesium powder. When it begins to burn, stop timing; this time is the flame-retardant time.

6.6 Appearance Quality The appearance quality of magnesium powder is inspected visually.

7.1 Inspection and Acceptance

7.1.1 The supplier shall inspect the products to ensure that the product quality meets the requirements of this document and the purchase order, and fill out a quality certificate.

7.1.2 The buyer shall inspect the received products in accordance with the provisions of this document. If the inspection results do not conform to the provisions of this document or the purchase order, the buyer shall... Objections should be submitted to the supplier in writing and resolved through negotiation between the supplier and the buyer. Objections concerning appearance quality and particle size distribution (or median diameter) should be submitted within [timeframe missing]. Objections must be raised within one month of the product's issuance date. Objections concerning other performance aspects must be raised within three months of receiving the product. For arbitration, please contact [relevant authority/organization]. The sampling was conducted by a unit recognized by both the supplier and the buyer, and samples were taken jointly by the buyer.

7.2 Batching

7.2.1 Magnesium powder shall be submitted for acceptance in batches, and each batch shall consist of magnesium powder of the same grade. The batch weight of atomized magnesium powder and ball-milled aluminum-magnesium alloy powder shall not exceed the specified limit. More than 5000kg.

7.2.2 Milling magnesium powder requiring passivation should be produced from the same batch of magnesium ingots, with 5000kg constituting one inspection batch. Batches less than 5000kg are also acceptable. An inspection batch.

7.2.3 If the buyer has special requirements for the batch weight, they can negotiate with the supplier and indicate them in the order form.