

HG

CHEMICAL INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HG/T 2573-2012

Replacing HG/T 2573-2006

Light magnesium oxide for industrial use

工业轻质氧化镁

(English Translation)

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Foreword

This Standard was drafted in accordance with the rules in GB/T 1.1-2009.

This Standard serves as a replacement of HG/T 2573-2006 Light Magnesium Oxide for Industrial Use. In comparison with HG/T 2573-2006, apart from editorial modifications, there are several main technical changes as follows:

---Type-I Grade-1 sulfate content index is added to the requirements (see 5.2; 4.2 in Version 2006);

---Testing method for magnesium oxide content is modified (see 6.4; 5.3 in Version 2006);

---Testing method for chlorine content determination is modified: the determination of chlorine content is modified into precipitation titration method (see 6.11; 5.10 in Version 2006);

---Testing method for bulk density determination is modified (see 6.13; 5.12 in Version 2006).

The formulation of this Standard adopts the redrafting law and takes Russian standard GOCT844-1979 (4th modification since October 1, 1990) Technical Conditions for Industrial Calcination of Magnesium Oxide as a reference. The degree of consistency with GOCT844-1979 is non-equivalent.

1 Scope

This Standard stipulates the classification, requirements, testing methods, inspection rules, marking, labels, packaging, transportation and storage of light magnesium oxide for industrial use.

This Standard is applicable to light magnesium oxide calcinated through basic magnesium carbonate and magnesium hydroxide for industrial use. The product is mainly applied to industries like plastics, rubber, wires, cables, dye, grease, glass ceramics, rubber tires, adhesives, tanning and fuel suppressant, etc.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 191-2008 Packaging - Pictorial Marking for Handling of Goods;

GB/T 3049-2006 Chemical Products for Industrial Use - General Method for Determination of Iron Content - 1,10-Phenanthroline Spectrophotometric Method (idt ISO 6685:1982);

GB/T 6003.1-1997 Test Sieves of Metal Wire Cloth;

GB/T 6678 General Principles for Sampling Chemical Products;

GB/T 6682-2008 Water for Analytical Laboratory Use - Specification and Test Methods;

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values;

HG/T 3696.1 Inorganic Chemicals for Industrial Use - Preparations of Standard and Reagent Solutions for Chemical Analysis - Part 1: Preparations of Standard Volumetric Solutions;

HG/T 3696.2 Inorganic Chemicals for Industrial Use - Preparations of Standard and Reagent Solutions for Chemical Analysis - Part 2: Preparations of Standard Solutions for Impurity;

HG/T 3696.3 Inorganic Chemicals for Industrial Use - Preparations of Standard

6.4.1 Method summary

Use triethanolamine to conceal a small amount of trivalent iron, trivalent aluminum and divalent manganese plasma. When pH is 10, use chrome black T as the indicator; use ethylene diamine tetra-acetic acid standard volumetric solution to titrate calcium and

magnesium content. Subtract calcium content from it; calculate the content of magnesium oxide.

6.4.2 Reagents

6.4.2.1

Hydrochloric acid solution

1+1.

6.4.2.2

Ammonia solution

1+1.

6.4.2.3

Triethanolamine solution

1+3.

6.4.2.4

Ammonia-ammonium chloride buffer solution A (pH ~ 10).

6.4.2.5

Silver nitrate solution

10 g/L.

6.4.2.6

Ethylene diamine tetra-acetic acid standard volumetric solution

C (EDTA) ~ 0.02 mol/L.

6.4.2.7

Chrome black T indicator.

6.4.3 Analytical procedures

6.4.3.1

Preparation of test solution A Weigh-take around 5 g of sample, accurate to 0.0002 g; place it into a 250 mL beaker.

Use a small amount of water to moisten it. Add around 55 mL of hydrochloric acid solution, stir it, till the sample completely dissolves. Put on the watch glass; boil it for 3 min ~ 5 min. While it is still hot, use medium-speed quantitative filter paper to filter it.

Use hot water to rinse it, till there is no chloride ion (use silver nitrate solution to examine it). After cooling it down, transfer all the filtrate and rinsing solution into a 500 mL volumetric flask. Use water to dilute to the scale, then, mix it up. This is test solution A; it shall be used for the determination of magnesium oxide content, calcium oxide content, iron content and

sulfate content. Retain the filter paper and the residue for the determination of hydrochloric acid insoluble matter content.

Use a transfer pipette to transfer-take 25 mL of test solution A; place it in a 250 mL volumetric flask. Use water to dilute to the scale, then, mix it up. Use a transfer pipette to transfer-take 25 mL of the test solution, then, place it in a 250 mL conical flask. Add 50 mL of water; use ammonia solution to adjust the pH value of the solution into 7 ~ 8 (use pH test paper to examine it). Add 5 mL of triethanolamine solution, 10 mL of ammonia-ammonium chloride buffer solution A, 0.1 g of chrome black T indicator; use

6.7.2.5.1 Determination

Transfer-take a certain amount of test solution A (6.4.3.1) (Type-I: transfer-take 10.00 mL of superior product, 3.30 mL of first-class product; Type-II: transfer-take 4.00 mL of superior product, 2.50 mL of first-class product and 2.00 mL of qualified product). Place it into a 50 mL colorimetric tube; add water to around 20 mL. Use ammonia solution to adjust the solution to neutral (use pH test paper to examine it). Add 1 mL of hydrochloric acid solution and 2 mL of barium chloride solution; add water to the scale, then, mix it up. Place it in water bath at 40 °C ~ 50 °C. After 10 min, compare the turbidity. The turbidity manifested by the test solution shall not be more than the standard turbidity-comparing solution.

6.7.2.5.2 Preparation of standard turbidity-comparing solution

Transfer-take 2.00 mL of sulfate standard solution; place it into a 50 mL colorimetric tube. The following procedures shall comply with the operation described in 6.7.2.5.1:

"add water to around 20 mL.....after 10 min, compare the turbidity".

6.8.1 Method summary

Pour the sample into the sieve. Use soft brush to softly brush it, till no powdered sample passes through the sieve. Then, weigh the sieve residue.

6.8.2 Instruments and equipment

6.8.2.2

Soft brush

Brush length: around 3 cm; brush width: around 3 cm ~ 5 cm.

6.8.2.1

Test sieve

R40/3 series, phi200 x 50-0.15/0.1 (GB/T 6003.1-1997)