



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

GB 1886.208-2016

Replacing GB 12487-2010

**National Food Safety Standard -- Food Additives- ethyl malt
phenol**

食品安全国家标准 食品添加剂 乙基麦芽酚

(English Translation)

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1 Scope

This standard applies to basic magnesium carbonate or magnesium hydroxide, calcined prepared food additive light magnesium; carbonate to heavy or heavy Calcining magnesium hydroxide prepared food additive heavy magnesium oxide.

2 Molecular formula and relative molecular mass

Formula 2.1

MgO

2.2 Relative molecular mass

40.30 (according to 2013 international relative atomic mass)

3.1 Sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

Table 1 Sensory requirements

Project requires test methods Color White State powder Take appropriate 50mL sample is placed in a beaker and watch in natural light Color and state police

3.2 Physical and Chemical Indicators

Physical and chemical indicators should be consistent with the provisions of Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Magnesium oxide (MgO, after ignition) content, w /% 96.0 ~ 100.5
 Appendix A A.4 Calcium oxide (CaO), w /% <= 1.5 A.5 Appendix A Acid insoluble, w /% <= 0.1 A.6 in Appendix A Loss on ignition, w /% <= 5.0 Appendix A A.7 the free base in

Appendix A test A.8 GB 1886.216-2016 TABLE 2 (cont.) Item Index Test Method Soluble salts by experiment A.9 in Appendix A Arsenic (As)/(mg/kg) ≤ 3.0 GB 5009.76 Lead (Pb)/(mg/kg) ≤ 4.0 GB 5009.12 or GB 5009.75 GB 1886.216-2016 Appendix A Testing method A.1 Warning Reagents The test methods used in corrosive, the operator should be careful as splashed on the skin should immediately wash with water, Yan in severe cases should be treated immediately.

A.2 General Provisions this standard reagents and water in the absence of other requirements specified, refers to three analytical reagent water and GB/T 6682 stipulated. test Test used in the standard titration solution, preparations and products, did not indicate when the other requirements, according to GB T 601, the provisions of GB/T 603 the preparation /.

The solution in a solvent which does not indicate by when formulated, refers to an aqueous solution.

A.3 Identification Test A.3.1 Reagents and materials A.3.1.1 ammonium chloride.

A.3.1.2 hydrochloric acid solution. 13.

A.3.1.3 ammonia solution. 23.

A.3.1.4 ammonium carbonate solution. 200g/L. Weigh 20.0g ammonium carbonate, dissolved in water, ammonia is added 20mL, diluted with water to 100mL.

A.3.1.5 sodium phosphate solution. 60g/L.

A.3.2 Identification method Weigh about 1g sample was dissolved in 25mL hydrochloric acid solution in the presence of ammonium chloride was added and the sample solution is not a solution of ammonium carbonate when the precipitate formed, continue to add sodium phosphate, insoluble in ammonia solution to generate a white crystalline precipitate.

A.4 Determination of magnesium oxide (MgO, after burning) Content A.4.1 Method summary Triethanolamine masking with a small amount of trivalent iron, trivalent aluminum and divalent manganese ions at a pH of 10, with chrome black T as indicator, with ethylene Amine titration Disodium standard solution titration, calculate the amount of calcium and magnesium together, subtract calcium content of magnesium oxide content.

A.4.2 Reagents and materials A.4.2.1 hydrochloric acid solution. 11.

A.4.2.2 ammonia solution. 11.

A.4.2.3 triethanolamine solution. 13.

A.4.2.4 ammonia - ammonium chloride buffer solution A (pH~10).

A.4.2.5 disodium edetate (EDTA) standard titration solution. $c(\text{EDTA}) = 0.02\text{mol/L}$.

A.4.2.6 chrome black T indicator.

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A.4.3 Analysis step

Weigh about 5g samples, accurate to 0.0002g, placed in 250mL beaker, moistened with a little water, add about 55mL hydrochloric acid solution, the sample was stirred until completely dissolved. Cover the surface of pan, boil 3min ~ 5min, after cooling transferred to 500mL volumetric flask, dilute to the mark with water Degree, shake. This is the test solution A, for the magnesium oxide content, the determination of calcium oxide content.

Pipette 25mL sample solution A, placed in 250mL flask, diluted with water to the mark. Pipette 25mL of the sample solution was placed in 250mL conical flask, 50mL of water was added, the solution was adjusted with aqueous ammonia solution to pH7 ~ 8 (with wide pH Pan dipstick test), triethanolamine solution was added 5mL, 10mL ammonia - ammonium chloride buffer solution A, 0.1g chrome black T indicator, with ethylene diamine Disodium (EDTA) titration standard solution titration solution from purple to pure blue as the end point.

A.4.4 Calculation Results Magnesium oxide (MgO, after burning) the content of the mass fraction w_1 , according to formula (A.1) Calculated.

$$) \times c \times M_1$$

$$500 \times$$

$$250 \times 1000$$

$$\times 100\% \text{ (A.1)}$$

Where.

Volume V_1 --- titrate the sample solution consumed disodium edetate (EDTA) titration standard solution, in milliliters (mL of);

V_2 --- volume A.5.2.5 titration of calcium oxide consumed disodium edetate (EDTA) titration standard solution, unit Milliliters (mL of);

20 --- conversion factor;

c --- disodium edetate (EDTA) standard titration solution concentration, in units of moles per liter (mol/L);

M_1 --- MgO molar mass in grams per mole (g/mol) [$M(\text{MgO}) = 40.30$];

M_1 --- the quality of the sample, in grams (g);

Volume 25 --- A Pipette the sample solution, in milliliters (mL);

--- Volumetric flask of 500 milliliters (mL);

Volume 25 --- pipetting the sample solution, in milliliters (mL);

--- Volumetric flask of 250 milliliters (mL);

1000 --- conversion factor.

The results parallel arithmetic mean of the measurement results shall prevail. Twice under the same condition of independent determination results obtained absolute difference not more than 0.2%.

A.5 calcium oxide (CaO) Determination A.5.1 Method summary Triethanolamine masking with a small amount of trivalent iron, trivalent aluminum and divalent manganese ions at a pH of 12.5 to the Cal directs Agents with disodium edetate calcium ion standard solution titration.

A.5.2 Reagents and materials A.5.2.1 sodium hydroxide solution. 100g/L.

A.5.2.2 triethanolamine solution. 13.

A.5.2.3 disodium edetate (EDTA) standard titration solution. $c(\text{EDTA}) = 0.02\text{mol/L}$.

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A.5.2.4 the Cal indicator. Weigh 10g of sodium chloride dried at $105\text{ }^{\circ}\text{C}$ under $\pm 5\text{ }^{\circ}\text{C}$ 2h, and placed in a mortar, add 0.1g the Cal finely and mix. Placed in the weighing bottle, stored in a desiccator. Use of two months.

A.5.2.5 analysis step Pipette Pipette 50mL sample solution A (A.4.3), placed in 250mL Erlenmeyer flask. Was added 30mL of water, 5mL Triethanolamine Solution, a solution of sodium hydroxide solution with shaking, precipitation occurs when the solution just added 0.1g the Cal indicator to drop hydrogenation Sodium hydroxide solution until the solution changed from blue to red wine, and excess 0.5mL. With disodium edetate (EDTA) standard titration solution drop to the solution from wine red to pure blue as the end point.

A.5.3 Calculation Results Calcium oxide (CaO) content of the mass fraction w_2 , according to equation (A.2) Calculated.

$V_2 \times c \times M_2$

500×1000

$\times 100\%$ (A.2)

Where.

V_2 --- titrated sample solution consumed disodium edetate (EDTA) titration volume of standard solution, in milliliters (mL of);

c --- disodium edetate (EDTA) standard titration solution concentration, in units of moles per liter (mol/L);

The M_2 --- molar mass of calcium oxide units of grams per mole (g/mol) [$M(\text{CaO}) = 56.08$];