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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 1888-1998

Replacing GB 1888-2008

Food additive -- Ammonium bicarbonate

(English Translation)

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Foreword

This standard replaces GB 1888-2008 "food additive ammonium bicarbonate." this standard compared with GB 1888-2008, the main changes are as follows.

- Modify the total alkali content indicator;

- Remove the heavy metal content index requirements and test methods;

- The addition of lead content and salt content index requirements and test methods.

National Food Safety Standard Ammonium bicarbonate food additives

1 Scope

This standard applies to the production of ammonia by the ammonia process to absorb carbon dioxide obtained food additive ammonium bicarbonate.

This standard does not apply to cogeneration melamine ammonium bicarbonate.

2 Molecular formula and relative molecular mass

Formula 2.1

NH4HCO3

2.2 Relative molecular mass

79.06 (according to 2011 international relative atomic mass)

3 Technical requirements

3.1

Sensory requirements. comply with Table 1.

Table 1 Sensory requirements

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Project requires test methods Color White take appropriate sample is placed in a 50 mL beaker, observe the color and state under natural light. Gently flapping, a small amount of gas floating into the nostrils sniffing odor Odor Slight ammonia odor Status crystalline powder or granules

3.2
Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Total Alkalinity (to NH4HCO3 dollars), w /% 99.0 ~ 100.5 Appendix A A.4 Chloride (Cl dollars), w /% <= 0.003 A.5 in Appendix A Sulfur compounds (of SO4), w /% <= 0.007 A.6 in Appendix A Non-volatile matter, w /% <= 0.05a A.7 Appendix A Inorganic arsenic (As)/(mg/kg) <= 2 Appendix A A.8 Lead (Pb)/(mg/kg) <= 2 Appendix A A.9 Salt (sodium dodecyl benzene sulfonate meter)/(mg/kg) <= 10 Appendix A A.10 a product of the anti-caking agent added non-volatile index of not more than 0.55%.

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. When using flammable, do not use open flame heating.

A.2 General Provisions this standard reagents and water, did not indicate when the other requirements, refer to the three water analytical reagent and GB/T 6682 stipulated. test the standard solution titration experiments, impurity measurement standard solution, preparations and products, did not indicate when the other requirements, according to GB/T 601 used, GB/T 602, GB/T 603 provisions of 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 hydrochloric acid solution. 11.

A.3.1.2 sodium hydroxide solution. 40 g/L.

A.3.1.3 calcium hydroxide solution. 3 g/L, weighed 3 g of calcium hydroxide, placed in the reagent bottle, add 1000 mL of water, covered with cork, forced vibration After shaking, place 1 h. Supernatant with time.

A.3.1.4 red litmus paper.

A.3.2 Identification method A.3.2.1 Identification bicarbonate I.e., the sample was added a solution of hydrochloric acid gas is generated. This gas into calcium hydroxide solution, a white precipitate sir, continue ventilation into the supernatant.

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A.3.2.2 Identification of ammonium Sodium hydroxide solution was added to the sample, releasing a pungent gas, the gas can make moist red litmus paper blue.

A.4 Total Alkalinity (to NH_4HCO_3 meter) measurement A.4.1 Method summary Sample adding excess sulfuric acid standard titration solution, in the presence of an indicator, titrated with standard sodium hydroxide solution back titration.

A.4.2 Reagents and materials A.4.2.1 sulfuric acid standard titration solution. c ($1/2H_2SO_4$) = 0.5 mol/L.

A.4.2.2 sodium hydroxide standard titration solution. c (NaOH) = 0.5 mol/L.

A.4.2.3 methyl red - methylene blue mixed indicator solution. Weigh 0.1 g of methyl red dissolved in 50 mL 95% ethanol was added 0.05 g of methylene blue, After dissolution was diluted with 95% ethanol to 100 mL, and mix.

A.4.3 Analysis step

By weighing bottle quickly weigh about 1 g samples, accurate to 0.000 2 g. Immediately beforehand, washed with water containing 50.00 mL of sulfuric acid standard titration Solution of 250 mL conical flask, shake the conical flask so that the sample reaction was complete. Heat to boil out of the carbon dioxide, add 3 to 4 drops cooling Methyl red - methylene blue mixed indicator solution, titration with sodium hydroxide standard titration solution until the solution is grayed out is the end.

A.4.4 Calculation Results Total Alkalinity [ammonium bicarbonate (NH_4HCO_3) meter] mass fraction w1 according to formula (A.1) Calculated.

Where.

v1-- adding sulfuric acid standard titration solution volume in milliliters (mL);

Standard c1-- concentration of sulfuric acid titration solution, expressed in moles per liter (mol/L);

V2-- titration volume consumed sodium hydroxide standard titration solution, in milliliters (mL);

C2-- concentration of sodium hydroxide standard titration solution, expressed in moles per liter (mol/L);

M-- molar mass of ammonium bicarbonate, in units of grams per mole (g/mol) [M (NH_4HCO_3) = 79.06];

m-- sample mass, in grams (g);

1000-- conversion factor.

The results parallel arithmetic mean of the measurement results shall prevail. Two independent determination results obtained under the repeatability condition of absolute

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difference not more than 0.3%.

A.5 chloride (Cl) Determination A.5.1 Method summary in acidic medium was added a solution of silver nitrate, silver chloride to form a white suspension with a chlorine ion, compared to a standard turbidity solution.

A.5.2 Reagents and materials A.5.2.1 30% hydrogen peroxide.

A.5.2.2 nitric acid solution. 15.

A.5.2.3 silver nitrate solution. 17 g/L.

A.5.2.4 sodium carbonate solution. 25 g/L.

A.5.2.5 chloride standard solution. 1 mL solution of chlorine (Cl) 0.1 mg.

A.5.3 Instruments and Equipment A.5.3.1 porcelain evaporating dish. 100 mL.

A.5.3.2 high-temperature furnace. temperature can be controlled to 575 °C ± 25 °C.

A.5.4 Analysis step

Weigh 2.00 g ± 0.01 g sample was placed in porcelain evaporating dish, add 30 mL of water dissolved, add 0.4 mL of sodium carbonate solution and 1 mL 30% Hydrogen peroxide, slowly evaporated to dryness. Placed in 575 °C ± 25 °C high temperature furnace, burning 40 min, cooled. The residue was dissolved with 30 mL of water and transferred to a 50 mL colorimetric tube, if necessary, filtered. Adjust the volume of the solution to about 40 mL, 5 mL was added a solution of nitric acid and 1 mL of nitric acid Silver solution diluted with water to the mark, shake, place 5 min after turbidity. Turbidity should not exceed the standard turbidity solution to produce turbidity.

Turbidity standard solution. take 0.6 mL chloride standard solution, placed in porcelain evaporating dish, the following from the "plus 0.4 mL of sodium carbonate solution and 1 mL 30% hydrogen peroxide "begins, and treated in the same sample simultaneously.

A.6 Determination of sulfur compounds (as SO4 basis) A.6.1 Method summary in a sample of hydrogen peroxide was added, the sample of the various sulfur-containing ions into sulfate ions, barium ions in acidic medium with sulfuric acid Ion generating white barium sulfate aerosols, compared with the standard turbidity solution.

A.6.2 Reagents and materials A.6.2.1 30% hydrogen peroxide.

A.6.2.2 hydrochloric acid solution. 11.

A.6.2.3 sodium carbonate solution. 25 g/L.

A.6.2.4 barium chloride solution. 50 g/L.

A.6.2.5 sulfate standard solution. 1 mL solution of a sulfate (SO4) 0.1 mg.

A.6.3 Instruments and Equipment A.6.3.1 porcelain evaporating dish. 100 mL.

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