



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

GB 1886.10-2015

Replacing GB 1903-2008

**National Food Safety Standard -- Food Additives -- Ice acetic
acid (also known as glacial acetic acid)**

(English Translation)

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Foreword

This standard replaces GB 1903-2008 "Food Additives glacial acetic acid (glacial acetic acid)." this standard compared with GB 1903-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives glacial acetic acid (also known as glacial acetic acid)." National Food Safety Standard Food Additives glacial acetic acid (also known as glacial acetic acid)

1 Scope

This standard applies to the ethanol produced by the fermentation of raw materials obtained food additive glacial acetic acid (also known as glacial acetic acid).

2 Molecular formula and relative molecular mass

Formula 2.1

CH3COOH

2.2 Relative molecular mass

60.05 (according to 2007 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 Colorless, transparent color Liquid state Take appropriate 50mL sample is placed in a beaker, under natural light Observe its color and status

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 Acetic acid content, w /% ≥ 99.5 Appendix A A.4 Potassium permanganate test by test A.5 in Appendix A Evaporation residue, w /% ≤ 0.005 A.6 in Appendix A Crystallization point/ $^{\circ}\text{C}$ ≥ 15.6 GB/T 7533 Brewing acetic acid ratio (natural degree) /% ≥ 95.0 GB/T 22099 TABLE 2 (cont.) Item Index Test Method Heavy metals (Pb)/(mg/kg) ≤ 2.0 GB 5009.74 Arsenic (As)/(mg/kg) ≤ 1.0 GB 5009.76 Free Acid Test by A.7 in Appendix A Chroma/Hazen ≤ 20.0 GB/T 3143a 100mL using a colorimetric tube.

Appendix A

Testing method

A.1 Warning

Some test procedures prescribed test method can lead to dangerous situations. The operator shall take appropriate safety and health practices.

A.2 General Provisions this standard reagents and water in the absence of other specified requirements, refer to the three water analytical reagent and GB/T 6682 regulations. Reagents Used in the standard solution, standard solution for measuring impurities, formulations and products, did not indicate when the other requirements according to GB/T 601, GB/T 602, GB/T 603 provisions of the preparation. Solution was used in the tests did not indicate what is formulated with solvent, it refers to an aqueous solution.

A.3 Identification Test A.3.1 Reagents and materials A.3.1.1 hydrochloric acid.

A.3.1.2 sulfuric acid.

A.3.1.3 ethanol (95%).

A.3.1.4 sodium hydroxide solution. 40g/L.

A.3.1.5 ferric chloride solution. 50g/L.

A.3.2 Analysis step

A.3.2.1 Take 1mL samples, add sodium hydroxide solution, and add ferric chloride solution that is dark red, boiled, or red-brown Shen occur Starch, together with hydrochloric acid, then dissolved into a yellow solution.

A.3.2.2 take a little sample, plus a small amount of sulfuric acid and ethanol, is heated, that unique aroma of ethyl occur.

A.4 Determination of acetate content A.4.1 Method summary Phenolphthalein as indicator, titrated with sodium hydroxide standard solution titration, calculated based on the volume of

consumption of acetic acid sodium hydroxide standard titration solution Content.

A.4.2 Reagents and materials A.4.2.1 sodium hydroxide standard titration solution. c (NaOH) = 0.5mol/L.

A.4.2.2 phenolphthalein indicator solution. 10g/L.

A.4.3 Analysis step

Weigh 1g sample, accurate to 0.0002g, placed in 250mL stoppered Erlenmeyer flask, Erlenmeyer flask equipped with a new pre-boiled and cooled 80mL Water, add 2 drops of phenolphthalein indicator solution, titration with sodium hydroxide standard titration solution until the solution was pale pink, holding 30s does not fade as the end point.

A.4.4 Calculation Results Acetic acid content mass fraction w_1 , according to equation (A.1) Calculated.

$V \times c \times M$

$m \times 100\%$

Where.

Volume V --- sodium hydroxide standard titration solution (A.4.2.1), expressed in milliliters (mL);

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

--- The M acetic acid molar mass in grams per mole (g/mol), [M (CH₃COOH) = 0.06005];

M --- the quality of the sample, in grams (g).

Take two parallel determination results of the arithmetic average of the measurement results, the results of two parallel determination of the absolute difference is not more than 0.2%.

A.5 potassium permanganate test A.5.1 Method summary Reducing substance in the sample and the role of potassium permanganate, within the specified time, that appear pink solution should disappear.

A.5.2 Reagents and materials Potassium permanganate solution. 3.1g/L.

A.5.3 Analysis step

Volume of 2mL sample and put a stopper colorimetric tube. Water was added 10mL dissolved, 0.1mL permanganate at 20 °C ± 1 °C water bath Potassium solution, shake, pink solution should disappear within 30min.

A.6 Determination of evaporation residue A.6.1 Method summary After the sample water bath evaporated, and the predetermined time a predetermined temperature drying,

weighing the mass of the residue in an oven.

A.6.2 Analysis step

Weigh 50g sample to the nearest 0.01g. Placed in a pre 100mL constant weight evaporating dish, and evaporated to dryness on a water bath, placed in 105 °C ± the oven temperature 2 °C drying 2h. The residue was reserved for the Determination of Heavy Metals.

A.6.3 Calculation Results Evaporation residue mass fraction w_2 , according to equation (A.2) Calculated.

$$m \times 100\%$$

Where.

m_1 --- residue mass in grams (g);

M --- the quality of the sample, in grams (g).

Take two parallel determination results of the arithmetic average of the measurement results, the two parallel determination results is not more than the absolute difference between the two measured 20% of the arithmetic mean value.

A.7 Determination of free acid mine A.7.1 Principle Sample of free mineral acid (sulfuric acid, nitric acid, hydrochloric acid) is present, the hydrogen ion concentration increases, can change the color of the indicator.

A.7.2 Reagents and materials Thyme phenol blue paper. Take 0.1g thyme phenol blue, soluble in ethanol 50mL, add 6mL sodium hydroxide solution (4g/L), add water to 100mL. After the filter paper impregnated with this solution to dry and set aside.

A.7.3 Analysis step

Capillary glass rod or stick a little sample points on the thyme phenol blue paper, paper to be dry (about 5min ~ 10min) was observed after Strip changes, if paper purple spots, indicating the presence of free mineral acid. Mine was not detected in the free acid is qualified.