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

GB 1886.39-2015

Replacing GB 13736-2008

**National Food Safety Standard -- Food Additives -- Potassium
sorbate**

食品安全国家标准 食品添加剂 山梨酸钾

(English Translation)

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Foreword

This standard replaces GB 13736-2008 "Food additive potassium sorbate." this standard compared with GB 13736-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives potassium sorbate." National Food Safety Standard Food additives potassium sorbate

1 Scope

This standard applies to sorbic acid and potassium carbonate (or potassium hydroxide) water as a solvent in the reaction of food additives potassium sorbate.

2.1 Chemical Name

Trans, trans-2,4-hexadiene potassium Formula 2.2 C₆H₇KO₂

2.3 Formula

CH₃CH = CHCH = CHCOOK

2.4 Relative molecular mass

150.22 (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 White or off-white color the state of a powder or granules
Take the right amount of sample is placed in a clean, dry white porcelain dish, under natural light, Observe the 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 Potassium sorbate (to $C_6H_7KO_2$ dollars) (dry basis), w /% 98.0 ~ 101.0 Appendix A A.4 Loss on drying, w /% ≤ 1.0 A.5 in Appendix A Chloride (Cl dollars), w /% ≤ 0.018 A.6 in Appendix A Sulfate (SO_4 dollars), w /% ≤ 0.038 Appendix A A.7 Formaldehyde (HCHO in dollars), w /% ≤ 0.1 Appendix A A.8 Heavy metals (Pb)/(mg/kg) ≤ 10.0 GB 5009.74 Arsenic (As)/(mg/kg) ≤ 3.0 GB 5009.76 Lead (Pb)/(mg/kg) ≤ 2.0 GB 5009.75 Clarity test by A.9 in Appendix A the free base in Appendix A test A.10 Appendix A Testing method A.1 Warning Reagents The standard test methods used for toxic or corrosive, care should be taken. As splashed on the skin should stand that is rinsed with water, severe cases should be treated immediately. When using the virulent, should be strictly in accordance with the relevant provisions of the management; should be used to avoid inhalation or skin Skin contact should be necessary in a fume hood.

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. test 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 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 principle of the method A.3.1.1 hydrogen tartrate potassium sorbate, sodium reacts with ethanol insoluble white precipitate potassium tartrate.

A.3.1.2 potassium sorbate and bromine addition reaction of bromine leaving brown disappear.

A.3.1.3 potassium sorbate unsaturated group characteristic absorption in the UV area.

A.3.2 Reagents and materials A.3.2.1 ethanol.

A.3.2.2 hydrochloric acid solution. 13.

A.3.2.3 saturated solution of sodium hydrogen tartrate.

A.3.2.4 bromine saturated solution.

A.3.2.5 hydrochloric acid solution. 91000.

A.3.3 Instruments and Equipment UV spectrophotometer.

A.3.4 Analysis step

A.3.4.1 Weigh 1g sample accurate to 0.01g, was dissolved in 100mL water, adding 5mL saturated tartaric 5mL in the sample solution Sodium bicarbonate solution and 5mL of anhydrous ethanol, shake, there should be a transparent white precipitate formation.

A.3.4.2 Weigh 1g sample accurate to 0.01g, was dissolved in 100mL of water, the sample solution in 10mL, acetone 1mL, dropping Hydrochloric acid solution (A.3.2.2) to make into a weak acid, add 2 drops of bromine solution when shaken, the bromine color should disappear.

A.3.4.3 Weigh 50mg samples, accurate to 0.1mg, soluble in water, dilute to 250.0mL, draw 2.0mL, with hydrochloric acid solution (A.3.2.5) dilute Release to 200.0mL, in 230nm ~ 350nm spectrophotometrically measured, the solution should have a maximum absorption at $264\text{nm} \pm 2\text{nm}$ at most Than large absorbance at the absorption should be 1650 to 1900.

A.4 potassium sorbate (to $\text{C}_6\text{H}_7\text{KO}_2$ dollars) (dry basis) of the Determination A.4.1 Method summary Dried sample with glacial acetic acid as the solvent, acetic anhydride as a co-solvent, with crystal violet as indicator, titration with perchloric acid standard solution titration, according to Consumption of perchloric acid standard titrant volume calculation potassium sorbate content.

A.4.2 Reagents and materials A.4.2.1 glacial acetic acid.

A.4.2.2 acetic anhydride.

A.4.2.3 perchloric acid standard titration solution. $c(\text{HClO}_4) = 0.1\text{mol/L}$.

A.4.2.4 crystal violet indicator solution. 5g/L.

A.4.3 Analysis step

A.4.3.1 Weigh about 0.2g dried (A.5.2), accurate to 0.0002g, it has been placed into 48mL 2mL glacial acetic acid and acetic anhydride 250mL iodine bottle, warmed to make a solution. Cooled to room temperature, add 2 drops of crystal violet indicator solution, titration with perchloric acid standard solution titration to dissolve Solution from purple to blue-green endpoint.

A.4.3.2 measured at the same time, according to the same procedure and the determination of the sample without using the same amount of reagent blank test solution.

A.4.4 Calculation Results Potassium sorbate (to $\text{C}_6\text{H}_7\text{KO}_2$ dollars) (dry basis) of the mass fraction w_1 , according to equation (A.1) Calculated.

$(V_1 - V_2)$

$m \times 100\%$

Where.

V1 --- sample consumed perchloric acid standard titration solution volume in milliliters (mL);

V2 --- blank test consumption volume perchloric acid standard titration solution, in milliliters (mL);

1000 --- conversion factor;

Concentration c --- perchloric acid standard titration solution, expressed in moles per liter (mol/L);

--- The M molar mass of potassium sorbate in grams per mole (g/mol), [M (C₆H₇KO₂) = 150.2];

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

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 Determination of loss on drying A.5.1 Method summary Excretion measured at a certain temperature in a sample can be volatile substance.

A.5.2 Analysis step

Weigh 2g ~ 3g samples, accurate to 0.0002g, placed in a pre dried to a constant mass of 105 °C ± 2 °C weighing bottle, paved Layer of 5mm or less. At 105 °C ± 2 °C constant temperature drying oven 3h, placed in a desiccator to cool 30min weighing. Reserved dried it was used to determine the content of potassium sorbate.

A.5.3 Calculation Results Loss on drying mass fraction w₂, according to equation (A.2) Calculated.

m₂-m₁

100% (A.2)

Where.

M₂ --- dried before the mass of the sample, in grams (g);

Quality, unit m₁ --- after drying the sample in grams (g).

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 0.1%.

A.6 chloride (Cl) Determination A.6.1 Method summary Chloride and silver nitrate generated silver chloride in an acidic (nitric acid) solution of white precipitate. The sample was dissolved in water under acidic conditions by adding nitrate Acid silver a white turbid,