



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

GB 1886.18-2015

Replacing GB 4578-2008

**National Food Safety Standard -- Food Additives -- Saccharin
sodium**

食品安全国家标准 食品添加剂 糖精钠

(English Translation)

Issued on: November 13, 2015

Implemented on: May 13, 2016

**Issued by: National Health and Family Planning Commission of the
People's Republic of China**

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Foreword

This standard replaces GB 4578-2008 "food additive sodium saccharin." this standard compared with GB 4578-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives, saccharin sodium." National Food Safety Standard Sodium Saccharin Food Additive

1 Scope

This standard applies to phthalic anhydride as raw materials by chemical synthesis prepared food additive sodium saccharin.

2 Molecular formula, relative molecular mass and structural formula

Formula 2.1

$C_7H_4NNaO_3S \cdot 2H_2O$

2.3 Relative molecular mass

241.20 (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 or whitish color Odour odorless or faint aroma

Status crystalline powder Take the right amount of sample is placed in a clean, dry white

porcelain dish, in Observation of natural light and color of its status, its taste and olfactory

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 Saccharin sodium content, w /% 99.0 ~ 101.0 Appendix A A.4 Loss on drying, w /% $\leq$ 15.0 GB 5009.3a Total arsenic (As)/(mg/kg) $\leq$ 2.0 GB 5009.11 Lead (Pb)/(mg/kg) $\leq$ 2.0 GB 5009.12 by acidity and alkalinity test A.5 in Appendix A Benzoate and salicylate by test A.6 in Appendix A a drying temperature of 120 °C, drying time of 4h.

Appendix A

Testing method

A.1 Safety Tips

Reagents The standard test methods used for toxic or corrosive, the operation should 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.

Reagent 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 resorcinol.

A.3.1.2 sulfuric acid.

A.3.1.3 sodium hydroxide solution. 40g/L.

A.3.1.4 hydrochloric acid solution. 19.

A.3.2 Analysis step

A.3.2.1 Take a sample of about 20mg, about 40mg plus resorcinol, and the mixture after adding 10 drops of sulfuric acid, heating with Weihuo to significant dark green, cool, Add 10mL water and 10mL of sodium hydroxide solution, Serve green fluorescent solution.

A.3.2.2 take platinum wire, with hydrochloric acid solution after wet, dipped into the sample, in a colorless combustion flame, the flame that was bright yellow.

A.3.3 melting point determination the method according to GB/T 617 predetermined measurement. Take a sample of about 0.3g, add 5mL dissolved in water, dilute hydrochloric acid was added 1mL that crystallize, Filtered, residue washed with water and dried to 105 °C $\pm$ 2 °C measured melting point should be 226 °C ~ 230 °C.

A.3.4 solubility

Soluble in water, slightly soluble in ethanol.

A.4 Determination of saccharin sodium content A.4.1 Reagents and materials A.4.1.1 glacial acetic acid.

A.4.1.2 acetic anhydride.

A.4.1.3 crystal violet indicator solution. 5g/L.

A.4.1.4 perchloric acid standard titration solution. $c(\text{HClO}_4) = 0.1\text{mol/L}$.

A.4.2 Analysis step

Weigh the sample after drying of about 0.3g, accurate to 0.0002g, was added 5mL 20mL glacial acetic acid and acetic anhydride, dissolved, add 2 drops Crystal violet indicator solution, titration with perchloric acid standard solution titration until the solution was blue-green.

A.4.3 Calculation Results Saccharin sodium content mass fraction w_1 , according to equation (A.1) Calculated.

$m \times 100\%$

Where.

Volume V --- perchloric acid standard titration solution consumed in milliliters (mL);

M --- 1mL 0.1mol/L perchloric acid standard titration solution equivalent 0.02052g saccharin ($\text{C}_7\text{H}_4\text{NNaO}_3\text{S}$);

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

Take two parallel determination results of the arithmetic average of the measurement results, the absolute difference between the parallel determination results shall not exceed the arithmetic mean 0.2%.

A.5 acidity and alkalinity test A.5.1 Reagents and materials A.5.1.1 sodium hydroxide standard titration solution. $c(\text{NaOH}) = 0.1\text{mol/L}$.

A.5.1.2 phenolphthalein indicator solution. 10g/L.

A.5.2 Analysis step

Weigh 1.0g sample was dissolved in 10mL freshly boiled and cooled water. Add 1 drop of phenolphthalein indicator solution, the solution should be no pink color; plus 1 drop of sodium hydroxide solution, the solution should appear pink.

A.6 benzoate and salicylate test A.6.1 Reagents and materials A.6.1.1 acetic acid.

A.6.1.2 ferric chloride test solution. Weigh 9g of ferric chloride ($\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$), dissolved in

water and dilute to 100mL.

A.6.2 Analysis step

Weigh 0.5g sample was dissolved in 10mL water, add 5 drops of acetic acid, plus 3 drops of ferric chloride solution, there should be no precipitate or violet appears.

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