



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

GB 1886.8-2015

Replacing GB 1894-2005

**National Food Safety Standards -- Food additives -- Sodium
sulfite**

食品安全国家标准 食品添加剂 亚硫酸钠

(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 1894-2005 "food additive anhydrous sodium sulphite." this standard compared with GB 1894-2005, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives sodium sulfite." National Food Safety Standard Food additive sodium sulfite

1 Scope

This standard applies to food additive sodium sulfite.

2 Molecular formula and relative molecular mass

Formula 2.1

Na_2SO_3

2.2 Relative molecular mass

126.05 (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 Color White Status crystalline powder Take the right amount of sample is placed in 50mL beaker was observed under natural light 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 Sodium sulfite (Na_2SO_3) content (dry basis), w /% ≥ 96.0
 Appendix A A.4 Iron (Fe), w /% ≤ 0.01 Appendix A A.5 the free base (in Na_2CO_3 dollars),
 w /% ≤ 0.60 A.6 in Appendix A Heavy metals (Pb)/(mg/kg) ≤ 10.0 GB 5009.74 Arsenic
 (As)/(mg/kg) ≤ 2.0 GB 5009.76 Clarity through test A.7 in Appendix A Appendix A Testing
 method A.1 Warning Reagents The test method used in toxic or corrosive, the operator
 should be careful. Such as water splashed on the skin should immediately Flushing, 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 analytical reagent and third grade water GB/T 6682 regulations.

Standard solutions used in the tests, impurity standard solution, preparations and products,
 did not indicate when the other requirements, according to GB/T 601, GB/T 602 and the
 provisions of GB/T 603 formulation. 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 solution. 13.

A.3.1.2 iodine solution (14g/L). Weigh 1.4g iodine dissolved 10mL 360g/L potassium iodide
 solution, add 1 drop to 2 drops of hydrochloric acid, water Diluted to 100mL, stored in a
 brown bottle in the dark save.

A.3.1.3 mercurous nitrate solution (150g/L). Weigh 15g mercurous nitrate, dissolved in
 90mL water and 10mL nitric acid solution (19), the drop Add 1 drop of mercury, dark
 sealed.

A.3.2 Identification method A.3.2.1 preparation of the sample solution Weigh $20.0\text{g} \pm 0.1\text{g}$
 sample was dissolved in 100mL of water, Extemporaneous.

A.3.2.2 Identification sulfite A.3.2.2.1 test sample solution with pH paper, pH of about 9.

A.3.2.2.2 Take 5mL sample solution is placed in a test tube, drip iodine solution, yellow
 fade.

A.3.2.2.3 Take 5mL sample solution is placed in a test tube, drip hydrochloric acid, sulfur
 dioxide gas to escape. Mercurous nitrate wetted the filter paper test was black.

A.3.2.3 Identification of sodium ions Hydrochloric acid infiltration of platinum wire in the first
 combustion flame colorless to colorless, then dipped a little in the sample solution is
 colorless combustion flame, the flame was bright yellow.

A.4 Determination of sodium sulfite (Na_2SO_3) content (dry basis) of A.4.1 Method summary in weak acid solution, adding a certain excess iodine oxidation of sulfite. Starch as indicator, with an excess of sodium thiosulfate solution titrated Iodine.

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

A.4.2.2 iodine solution. $c(\text{I}_2) = 0.1\text{mol/L}$.

A.4.2.3 sodium thiosulfate standard titration solution. $c(\text{Na}_2\text{S}_2\text{O}_3) = 0.1\text{mol/L}$.

A.4.2.4 starch indicator solution. 5g/L, use a period of two weeks.

A.4.3 Analysis step

Quickly weighed about 0.2g sample (accurate to 0.0002g), placed in a pre burette added 40.00mL iodine solution and 30mL ~ 50mL water 250mL iodine bottle, add 2mL hydrochloric acid solution, and immediately cover the cork, seal, after shaking slowly dissolve into the dark place Set 5min. When titrated with sodium thiosulfate standard solution titration to pale yellow solution, adding about 3mL starch indicator solution and continue titration to Blue is the end disappear. Make a blank test simultaneously.

In addition to the blank test without the sample, the addition of reagents and other operations of the kind and amount (other than the standard titration solution) with the same Test.

A.4.4 Calculation Results Sodium sulfite (Na_2SO_3) content (dry basis) w_1 , according to formula (A.1) Calculated.

$$(V_1 - V_2) \times c_1 \times M_1$$

$$m_1 \times 1000$$

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

Where.

Volume of sodium thiosulfate standard titration V_1 --- titrate blank solution consumed solution in milliliters (mL);

Volume of sodium thiosulfate standard titration V_2 --- titration solution consumed by the sample solution, in milliliters (mL);

Concentration c_1 --- sodium thiosulfate standard titration solution, expressed in moles per liter (mol/L);

--- Sodium sulfite molar mass M_1 of units of grams per mole (g/mol), [$M_1(\text{Na}_2\text{SO}_3) = 63.02$];

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

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 0.3%.

A.5 Determination of iron (Fe) of A.5.1 Method summary Reduction with ascorbic acid in the sample solution of ferric ions into ferrous ions, at a pH of from 2 to 9.00, a divalent iron ions with phenanthroline Morpholino generated orange-red complex with a spectrophotometer measuring the absorbance at the maximum absorption wavelength at 510nm.

A.5.2 Reagents and materials GB/T 3049-2006 in accordance with Chapter 4.

A.5.3 Instruments and Equipment GB/T 3049-2006 in accordance with Chapter 5.

A.5.4 Analysis step

A.5.4.1 draw the curve GB T 3049-2006 according to the provisions of 6.3/use of 4cm or 5cm iron absorption cell and the corresponding standard solution, drawn work curve.

A.5.4.2 Preparation of sample solution Weigh about 1g sample (accurate to 0.01g), placed in 150mL beaker, dissolved in 10mL water, was added 5mL of hydrochloric acid, in a water bath on evaporated to dryness. After the residue was dissolved in water, all transferred to 100mL volumetric flask and set aside.

A.5.4.3 Preparation of blank solution Except that no sample addition, the same amount of reagent preparation to join the other with the sample solution and simultaneously.

A.5.4.4 sample measurement in the flask containing the sample solution and the blank solution, add water to 60mL, with ammonia solution or hydrochloric acid solution to adjust the pH to 2, with fine Dense dipstick test pH. The test solution quantitatively transferred to 100mL volumetric flask, add 1mL ascorbic acid solution, then add 20mL buffer 10mL1,10-phenanthroline solution and the solution diluted with water to the mark. For not less than 15min. Determination of two test solution absorbance.

A.5.4.1 selection and specification in the same absorption cell (4cm or 5cm absorption cell), according to GB/T 3049-2006 measured as specified in 6.4 Absorbance, find out the quality of the sample solution and blank solution of iron from the working curve.

A.5.5 Calculation Results Iron (Fe) mass fraction w_2 , according to equation (A.2) Calculated.

$m_2 - m_3$

$m_4 \times 1000$

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

Where.