

ICS 67.220.20

CCS X 42



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

GB 1886.7-2015

Replacing GB 1893-2008

**National Food Safety Standard -- Food Additives -- Sodium
metabisulphite**

食品安全国家标准 食品添加剂 焦亚硫酸钠

(English Translation)

Issued on: September 22, 2015

Implemented on: March 22, 2016

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

Table of Contents

Foreword

1 Scope

2 Molecular formula and relative molecular mass

2.2 Relative molecular mass

3 Technical requirements

3.1 Sensory requirements

3.2 Physical and Chemical Indicators

Foreword

This standard replaces GB 1893-2008 "food additive sodium metabisulfite." this standard compared with GB 1893-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards of food additive sodium metabisulfite." National Food Safety Standard Food additive sodium metabisulfite

1 Scope

This standard applies to food additive sodium metabisulfite.

2 Molecular formula and relative molecular mass

Formula 2.1

$\text{Na}_2\text{S}_2\text{O}_5$

2.2 Relative molecular mass

190.12 (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 slightly yellow color Status crystalline powder Take the right amount of sample is placed in a clean, dry white porcelain dish, Observe its color and status in natural light

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 metabisulfite content ($\text{Na}_2\text{S}_2\text{O}_5$ basis), w /% ≥ 96.5
 Appendix A A.4 Iron (Fe), w /% ≤ 0.003 A.5 in Appendix A Clarity through test A.6 in
 Appendix A Arsenic (As)/(mg/kg) ≤ 1.0 GB 5009.76 Heavy metals (Pb)/(mg/kg) ≤ 5.0 GB
 5009.74 Appendix A Testing method A.1 Safety Tips the standard test operations require
 the use of some strong acid should be used with caution to avoid splashing on the skin.
 When using a volatile acid is required Carried out 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
 the required standard solution, impurity standard solution, preparations 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 potassium iodide solution. 360g/L.

A.3.1.3 hydrochloric acid solution. 13.

A.3.1.4 iodine solution. take 1.4g iodine and potassium iodide solution was placed in 10mL,
 add two drops of hydrochloric acid, dissolved in water, dilute to 100mL, storage in brown
 bottle stored.

A.3.1.5 mercurous nitrate solution. take 15g mercurous nitrate, add 90mL water, 10mL nitric
 acid solution (19) was dissolved, add a drop of mercury, to avoid Sealed light stand.

A.3.1.6 platinum wire.

A.3.2 Identification method A.3.2.1 This product was sulfite reaction effects After the
 sample solution was added iodine solution that is faded yellow.

Aqueous hydrochloric acid solution was dropped after the sample has a sulfur dioxide gas
 to escape to Asia mercury nitrate solution infiltrating dipstick test, which was black.

A.3.2.2 The reaction product is significant sodium effects Infiltration of platinum wire with
 hydrochloric acid to colorless in the first combustion colorless flame. Then dipped a little
 sample solution in a colorless flame combustion, the flame that it was bright yellow.

A.4 Determination of sodium metabisulfite content ($\text{Na}_2\text{S}_2\text{O}_5$ basis) A.4.1 Method
 summary in weakly acidic solution with iodine sulfite oxidized to sulfate. Starch as indicator
 drops solution with sodium thiosulfate standard titration Given an excess of iodine.

A.4.2 Reagents and materials A.4.2.1 standard iodine titration solution. $c \text{ I}_2 = 0.1 \text{ mol/L}$.

A.4.2.2 glacial acetic acid. 13.

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 soluble starch solution. 5g/L.

A.4.3 Analysis step

Pipette 50mL standard iodine titration solution and placed iodine bottle. Weigh about 0.2g sample, accurate to 0.0002g, was added to a solution of iodine the stopper, seal, placed 5min in the dark. Join 5mL glacial acetic acid, sodium thiosulfate standard titration solution titration, near the end, Adding 2mL soluble starch solution and continue titration to the disappearance of the blue solution as the end point.

Meanwhile Pipette 50mL iodine standard solution titration, a blank test in the same conditions.

A.4.4 Calculation Results Sodium metabisulfite content ($\text{Na}_2\text{S}_2\text{O}_5$ meter) mass fraction w_1 , according to equation (A.1) Calculated.

$c \times (V_0 - V_1) \times M$

$m \times 1000 \times$

100% (A.1)

Where.

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

Volume V_0 --- sodium thiosulfate standard titration of the blank test solution consumed in milliliters (mL);

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

M --- sodium metabisulfite molar mass in grams per mole (g/mol), $M \text{ Na}_2\text{S}_2\text{O}_5 = 47.52 \text{ g/mol}$;

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

1000 --- conversion factor.

The results parallel arithmetic mean of the measurement results shall prevail. In two independent determination results obtained under repeatability conditions absolute difference not more than 0.2%.

A.5 Determination of iron (Fe) of A.5.1 Method summary with GB/T 3049-2006 Chapter 3.

A.5.2 Reagents and solutions with GB/T 3049-2006 Chapter 4.

A.5.3 Equipment

With GB/T 3049-2006 Chapter 5.

A.5.4 Analysis step

Draw A.5.4.1 work curve.

According to GB/T 3049-2006 the provisions of the use of the optical path 1cm cuvette and the corresponding amount of iron standard solution, drawn work curve.

A.5.4.2 Preparation of test solution Weigh about 5g sample to the nearest 0.01g. 250mL beaker and placed on a high type, with a small amount of water dissolved, 25mL of hydrochloric acid solution, Boiling water bath evaporated to dryness. The residue was dissolved in water, all transferred to 250mL volumetric flask, dilute with water to the mark.

A.5.4.3 Preparation of the blank test solution High type in 250mL beaker, add a small amount of water, plus 25mL of hydrochloric acid in a boiling water bath to dryness, the residue was dissolved in water, all moved 250mL volumetric flask, dilute to the mark, shake.

A.5.4.4 Determination with pipette 50 mL of test solution and the blank test solution were placed in 100 mL volumetric flask, according to the following the provisions of GB/T 3049-2006, from the "if necessary, add water to 60mL" to get started.

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

$m_2 - m_3$

250×1000

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

Where.

m_2 --- Richard from the working curve of the test solution of iron mass, in milligrams (mg);

m_3 --- Richard from the working curve of the blank test solution of iron in mass, in milligrams (mg);

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

Pipette 50 --- volume of the test solution, in milliliters (mL of);

The total volume of the test solution --- 250 milliliters (mL of);

1000 --- conversion factor.

The results parallel arithmetic mean of the measurement results shall prevail. In two independent determination results obtained under repeatability conditions absolute