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

GB 25590-2010

**National food safety standards of food additives sodium
bisulfite**

(English Translation)

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Foreword

Appendix A of this standard is a normative appendix.

National Food Safety Standard Food Additives Sodium bisulfite

1 Scope

This standard applies to industrial food additive sodium absorption of sodium bisulfite to produce the sulfur dioxide produced.

2 Normative references

The standard file referenced in the application of this standard is essential. For dated references, only the dated edition of fitness for this standard. For undated references, the latest edition (including any amendments) applies to this standard.

3 Formula and relative molecular mass

Formula 3.1

NaHSO_3

3.2 Relative molecular mass

104.06 (according to 2007 international relative atomic mass)

4 Technical Requirements

4.1

Sensory requirements. comply with Table 1.

Table 1 Sensory requirements

Project requires test methods Color White take appropriate sample is placed in a beaker 50mL watch in natural light Observing the color and texture.

Crystalline powder or granules state organization

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Main content (SO₂ meter), w /% 58.5 ~ 67.4 Appendix A A.4
Water-insoluble, w /% ≤ 0.01 Appendix A A.5 Iron (Fe)/(mg/kg) ≤ 50 Appendix A A.6
Arsenic (As)/(mg/kg) ≤ 2 Appendix A A.7 Heavy metals (Pb)/(mg/kg) ≤ 5 Appendix A A.8
Lead (Pb)/(mg/kg) ≤ 2 Appendix A A.9 Selenium (Se)/(mg/kg) ≤ 5 Appendix A A.10
Appendix A (Normative) Testing method A.1 Warning Reagents The standard test methods
used for toxic or corrosive, the operator must be careful! Should immediately splashed on
the skin, such as Rinse water, severe cases should be treated immediately. When using
flammable, do not use open flame heating.

A.2 General Provisions the standard test methods used in the reagents and water, did not
indicate when the other requirements, refer to analytically pure reagents and GB/T
6682-2008 in Three water regulations. Used in the test standard titration solution, impurity
standard solution, preparations and products, did not indicate when the other requirements,
according to HG/T 3696.1, HG/T 3696.2, the provisions prepared HG/T 3696.3 of.

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

A.3.1.2 hydrochloric acid solution. 13.

A.3.1.3 potassium iodide solution. 360 g/L.

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

A.3.1.5 mercury nitrate solution. take 15 g of mercury nitrate Asia, add 90 mL of water, 10
mL solution of nitric acid (19) was dissolved, add a drop of mercury, dark Sealed and stored
for later use.

A.3.2 Analysis step

A.3.2.1 Identification sulfite 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 Identification of sodium ions 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 was Bright yellow.

A.4 Determination of the main content (SO₂ basis) A.4.1 Method summary in weakly acidic solution with iodine sulfite oxidized to sulfate. Starch as indicator, titrated with sodium thiosulfate standard solution titration Excess iodine.

A.4.2 Reagents and materials A.4.2.1 acetic acid solution. 13.

A.4.2.2 iodine standard solution. $c(1/2I_2) = 0.1\text{mol/L}$.

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.

A.4.3 Analysis step

It weighs about 0.2g sample quickly and accurately to 0.000 2g. Previously placed with a pipette 50mL was added iodine standard solution and 30mL ~ 50mL Water 250mL iodine bottle, add 5mL of acetic acid solution, and immediately cover the cork, seal, after shaking slowly dissolved into a dark place 5min.

Titration with sodium thiosulfate standard solution titration, adding about 3mL starch indicator solution near the end, continue titration to the disappearance of the blue is the end. with when the blank test.

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 measurement sample.

A.4.4 Calculation Results Main content of sulfur dioxide (SO₂) mass fraction w_1 and its value is expressed in%, according to formula (A.1) Calculated.

$$] 1000 /) [(10$$

c_{MVV}

$w(A.1)$

Where.

Numerical sodium thiosulfate standard titration V_0 -- titration blank test solution consumed by the solution volume in milliliters (mL);

Numerical sodium thiosulfate standard titration solution consumed V_1 -- titration solution volume in milliliters (mL);

Accurate c -- sodium thiosulfate standard titration solution concentration value in units of moles per liter (mol/L);

m -- sample mass value in grams (g);

Numerical M_{--} dioxide ($1/2SO_2$) molar mass in grams per mole (g/mol) ($M = 32.03$).

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

A.5 Determination of insoluble matter A.5.1 Instruments and Equipment A.5.1.1 sintered glass crucible. filter plate aperture $5\mu m \sim 15\mu m$.

A.5.1.2 electric oven. the temperature can be controlled at $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$.

A.5.2 Analysis step

It weighs about 20g sample to the nearest 0.01g. Placed in 400mL beaker with about 100mL water dissolve. Use was $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ drying to quality A constant amount of glass sand filtration crucible, the residue was washed with water, $60\text{ }^{\circ}\text{C} \sim 80\text{ }^{\circ}\text{C}$ 4 to 5 times, each time with about 30mL of water. The glass sand crucible and residues Slag at $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ dried to constant mass.

A.5.3 Calculation Results Water-insoluble mass fraction w_2 and its value is expressed in%, according to formula (A.2) Calculated.

$0.122 \times - = m$

mmw (A.2)

Where.

Numerical m_1 -- sintered glass crucible mass in grams (g);

Numerical m_2 -- water insoluble sand and glass crucible mass in grams (g);

m -- sample mass value in grams (g).

Take the arithmetic mean of the parallel determination results of the measurement results. Two parallel determination results of absolute difference is not more than 0.005%.

A.6 Determination of iron A.6.1 Reagents and materials with GB/T 3049-2006 Chapter 4.

A.6.2 Instruments and Equipment with GB/T 3049-2006 of Chapter 5.

A.6.3 Analysis step

A.6.3.1 draw the curve GB T 3049-2006 according to the provisions of 6.3/absorption cell using optical path 4cm 5cm and the corresponding amount of iron standard solution or drawn work curve.

A.6.3.2 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 hydrochloric acid solution in a boiling water bath Evaporated to dryness. The residue was dissolved in water, all transferred to 100mL volumetric flask, dilute with water to the mark.