



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

GB 1886.11-2016

Replacing GB 1907-2003

Food additive -- Sodium nitrite

食品安全国家标准 食品添加剂 亚硝酸钠

(English Translation)

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Foreword

This standard replaces GB 1907-2003 "food additive sodium nitrite." this standard compared with GB 1907-2003, the main changes are as follows.

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

1 Scope

This standard applies to food additive sodium dioxide gas absorption system was sodium nitrite.

2.1 Chemical Name

Sodium nitrite

Formula 2.2

NaNO_2

2.3 Relative molecular mass

69.00 (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 status White or slight yellow Rhombic Take the right

amount of sample is placed in a clean, dry white porcelain dish, self Under natural light, observe its 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 nitrite (NaNO_2) content (dry basis), w /% ≥ 99.0 Appendix A A.4 Loss on drying, w /% ≤ 0.25 A.5 in Appendix A Water-insoluble content (dry basis), w /% ≤ 0.05 A.6 in Appendix A TABLE 2 (cont.) Item Index Test Method Arsenic (As)/(mg/kg) ≤ 2.0 GB 5009.76 Heavy metals (Pb)/(mg/kg) ≤ 20 GB 5009.74 Lead (Pb) b/(mg/kg) ≤ 10.0 Appendix A A.7 Loss on drying to a factory test results shall prevail.

b When heavy metal $\leq 10\text{mg/kg}$ when no determination of lead.

Appendix A

Testing method

A.1 Safety Tips

Test reagents having partially corrosive, toxic materials, the operation should be careful.

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 glacial acetic acid.

A.3.1.2 hydrochloric acid solution. 13.

A.3.1.3 ferrous sulfate solution. 80g/L.

A.3.1.4 silver nitrate solution. 17g/L.

A.3.1.5 platinum wire. one end bent into a small loop of about 4mm in diameter and the other end is wound on a glass rod.

A.3.2 Identification method A.3.2.1 Identification of Nitrite A.3.2.1.1 proper amount of sample solution, adding hydrochloric acid solution was heated, emit reddish-brown gas.

After taking A.3.2.1.2 1mL sample solution (3g/L), ice acetic acidic ferrous sulfate solution should be added to a freshly prepared was brown.

A.3.2.2 Identification of sodium ions 1g sample was weighed, add 20mL of water to

dissolve. Platinum wire ring dipped in hydrochloric acid, to burn on the colorless flame. And then dipped in the test solution the colorless flame, the flame should be bright yellow.

A.4 Determination of sodium nitrite (NaNO_2) content (dry basis) of A.4.1 Method summary in an acidic medium with potassium permanganate oxidation of sodium nitrite, potassium permanganate consumption according to standard titration solution of sodium nitrite calculated content.

A.4.2 Reagents and materials A.4.2.1 sulfuric acid solution. 15. Sulfuric acid solution was heated to about 70°C , the standard solution of potassium permanganate titration solution until the solution was slightly red for only. Cooling spare.

A.4.2.2 standard potassium permanganate titration solution. $c\ 15\text{KMnO}_4 \div = 0.1\text{mol/L}$.

A.4.2.3 sodium oxalate standard titration solution. $c\ 12\text{Na}_2\text{C}_2\text{O}_4 \div = 0.1\text{mol/L}$. Weigh about 6.7g sodium oxalate and dissolved in 300mL (1

29) sulfuric acid solution (formulated in the same way A.4.2.1), diluted with water to 1000mL, shake. Calibration standard solution titration with potassium permanganate.

A.4.3 Analysis step

Weigh 2.5g ~ 2.7g sample, accurate to 0.0002g, set 500mL flask, add water to dissolve and dilute to the mark, shake uniform. In 250mL Erlenmeyer flask with about 40mL burette dropping potassium permanganate standard titration solution. 10mL sulfuric acid solution was added, with Pipette 25mL test solution, heated to about 40°C . Pipette added 10mL sodium oxalate standard titration solution, heated to $70^\circ\text{C} \sim 80^\circ\text{C}$, continue to titrate with potassium permanganate standard titration solution until the solution was pink and maintain 30s not disappeared.

A.4.4 Calculation Results Sodium nitrite (NaNO_2) content (dry basis) of the mass fraction w_1 , according to equation (A.1) Calculated.

$(C_1 \times V_1 - c_2 \times V_2) \times M \times 500 \times 1 - w_2 \div \times 1000 \times 100\%$ (A.1) where.

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

Volume of standard potassium permanganate titration V_1 --- titration test solution was added and the solution consumed, in milliliters (mL);

Sodium oxalate concentration c_2 --- standard titration solution, expressed in moles per liter (mol/L);

Pipette gross volume V_2 --- sodium standard titration solution, in milliliters (mL);

w_2 --- A.5 content by determination of loss on drying;

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

M --- and 1.00mL standard potassium permanganate titration solution $c\ 15\text{KMnO}_4 \div = 1.000\text{mol/L}$ equivalent in grams Asia Sodium nitrate molar mass in grams per mole (g/mol), $M\ 2\text{NaNO}_3 \div = 34.50$ equivalent.

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 loss on drying A.5.1 Instruments and Equipment A.5.1.1 weighing bottle. $\Phi 500\text{mm} \times 30\text{mm}$.

A.5.1.2 electric oven. the temperature can be controlled at $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$.

A.5.2 Analysis step

Previously used at $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$ dried weighing bottle Weigh about 5g samples, accurate to 0.0002g, $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$ power to 105 Oven dried to constant weight.

A.5.3 Calculation Results Loss on drying mass fraction w_2 , according to equation (A.2) Calculated.

$m_1 - m_2$

100% (A.2)

Where.

After m_2 --- mass of dry sample in grams (g);

m_1 --- sample mass, in grams (g).

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 0.005%.

A.6 Determination of water-insoluble content (dry basis) of A.6.1 Reagents and materials

A.6.1.1 hydrochloric acid.

A.6.1.2 starch - iodide test paper.

A.6.2 Instruments and Equipment A.6.2.1 crucible filter. plate pore size $5\mu\text{m} \sim 15\mu\text{m}$.

A.6.2.2 electric oven. the temperature can be controlled at $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$.

A.6.3 Analysis step

It weighs about 100g samples, accurate to 0.1g, placed in 500mL beaker, add 300mL water dissolved by heating. Used to advance at $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$ dried glass crucible sand filtration, washed with hot water until no nitrite ion far (take 20mL washing liquid, add two drops Hydrochloric acid, starch - iodide test paper check). Placed $105\ ^\circ\text{C} \sim 110\ ^\circ\text{C}$ electric oven dried to constant weight.