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

GB 1886.46-2015

Replacing GB 22215-2008

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

食品安全国家标准 食品添加剂 低亚硫酸钠

(English Translation)

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Foreword

This standard replaces GB 22215-2008 "Food additive sodium dithionite (hydrosulfite)." this standard compared with GB 22215-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives hypo."
National Food Safety Standard Food Additives hypo

1 Scope

This standard applies to food additives hypo.

2 Molecular formula and relative molecular mass

Formula 2.1

$\text{Na}_2\text{S}_2\text{O}_4$

2.2 Relative molecular mass

174.11 (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 a clean, dry white porcelain dish, in 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 Hypo, w /% ≥ 88.0 Appendix A A.4 Edetate disodium, w /% by Appendix A test A.5 Heavy metals (Pb)/(mg/kg) ≤ 10.0 A.6 in Appendix A Lead (Pb)/(mg/kg) ≤ 5.0 GB 5009.75 Cadmium (Cd)/(mg/kg) ≤ 2.0 GB 5009.15 TABLE 2 (cont.) Item Index Test Method Arsenic (As)/(mg/kg) ≤ 1.0 GB 5009.76 Zinc (Zn), w /% $\leq 0.03a$ A.7 Appendix A Clarity through test A.8 in Appendix A Formate (in terms HCHO), w /% $\leq 0.05b$ A.9 in Appendix A a sodium formate process production of food additives hypo indicator does not control the content of zinc.

b In zinc process production of food additives hypo formate does not control the content of the index.

Appendix A

Testing method

A.1 Safety Tips

Reagents used in this test method are toxic or corrosive, care should be taken. Such as water splashed on the skin should immediately Flushing, severe cases should be treated immediately.

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 solution. 11.

A.3.1.2 copper sulfate. 50g/L.

A.3.1.3 potassium permanganate solution. 3.5g/L.

A.3.1.4 Antimonite solution. Weigh 2g antimony potassium pyrophosphate, add 100mL water dissolved, boil for about 5min, rapid cooling, 10mL Sodium hydroxide solution, after placing 24h, filtered.

A.3.2 Identification method A.3.2.1 low sulfite identification as follows.

a) Take 10mL 10g/L test solution, add 2mL when copper sulfate solution, which was gray and black;

b) Take 10mL 10g/L test solution, potassium permanganate solution is added 1mL, the color of the solution disappears.

A.3.2.2 Identification of the sodium salt as follows.

a) Take a platinum wire dipped hydrochloric acid till colorless, remarryage take 10g/L test solution in the alcohol lamp burning yellow;

b) take appropriate 50g/L test solution is added antimony potassium pyrophosphate solution, a white crystalline precipitate (when the test tube with a glass rod friction wall, can accelerate the generation of precipitation).

A.4 Determination of low sodium sulphite A.4.1 Method summary Low sodium sulfite and neutral formaldehyde, generating formaldehyde and sodium bisulfite, sodium formaldehyde sulfoxylate, sodium sulfoxylate formaldehyde and iodine effect, Determine the amount that the consumption of low sodium sulfite standard iodine titration solution.

A.4.2 Reagents and materials A.4.2.1 hydrochloric acid solution. 111.

A.4.2.2 neutral formalin solution. 11. Take formaldehyde solution 100mL and 100mL water, placed in 400mL beaker, stir, add A few drops of 10g/L phenolphthalein indicator solution, sodium hydroxide solution with 100g L/and to the solution was slightly red and then hydrochloric acid solution was adjusted to reddish Just fade.

A.4.2.3 soluble starch solution. 10g/L.

A.4.2.4 standard iodine titration solution. $c \ 1212 \div \sim 0.1 \text{mol/L}$.

A.4.3 Analysis step

Weigh 1g sample, accurate to 0.0002g, placed in a pre beaker 20mL neutral formalin solution, stirring until completely dissolved, all transferred to 250mL volumetric flask, dilute to the mark, shake. Pipette 25mL of this solution in 250mL conical flask, add 4mL hydrochloric acid solution, titration with iodine standard solution titration, was added near the end 3mL starch solution and continue titration until the solution was light blue in it does not disappear shall end within 30s. While the same treatment the blank test solution.

A.4.4 Calculation Results Hypo mass fraction w_1 , according to equation (A.1) Calculated.

$V - V_0$

$1000 \times c \times M$

$\times 100\%$ (A.1)

Where.

V --- volume of iodine standard titration solution consumed titration test solution, in milliliters (mL);

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

1000 --- conversion factor;

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

M --- hypo molar mass in grams per mole (g/mol), $M_{4Na_2S_2O_4} = 43.53$ g/mol;

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

Pipette 25 --- volume of the test solution, in milliliters (mL of);

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

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 0.5%.

A.5 Determination of disodium edetate
A.5.1 Method summary Arsenite the chromium ion is reduced to chromium ions, chromium ions and ethylenediaminetetraacetic acid disodium generate violet complex that can be used edetate Disodium test.

A.5.2 Reagents and materials
A.5.2.1 acetic acid.

A.5.2.2 Potassium chromate solution. 5g/L.

A.5.2.3 sodium hydroxide solution. 25g/L.

A.5.2.4 arsenite solution. 10g/L. Weigh 1g arsenite (arsenic trioxide), sodium hydroxide solution was added 30mL, heated and dissolved.

After cooling, acetic acid was slowly added feature to 100mL.

A.5.3 Analysis step

Weigh $0.50g \pm 0.01g$ sample was placed in a test tube, add 5mL dissolved in water, add 2mL potassium chromate solution, 2mL arsenite solution Was heated in a water bath was purple 2min not qualified.

A.6 heavy metals (Pb) Determination
A.6.1 Method summary in weakly acidic solution of heavy metal ions and divalent sulfur ions to form a colored sulfide precipitation, low heavy metal content, generate stable Dark suspensions, for visual colorimetric determination of heavy metals.

A.6.2 Reagents and materials
A.6.2.1 hydrochloric acid.

A.6.2.2 acetic acid solution. 119.

A.6.2.3 sodium sulfide solution.

A.6.2.4 Lead standard solution. 1mL solution containing lead (Pb) 0.010mg. Pipette 10.00mL lead standard solution, placed in 100mL flask Diluted with water to the mark.