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

GB 1886.5-2015

Replacing GB 1891-2007

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

食品安全国家标准 食品添加剂 硝酸钠

(English Translation)

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Foreword

This standard replaces GB 1891-2007 "food additive sodium nitrate." this standard compared with GB 1891-2007, the main changes are as follows.

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

1 Scope

This standard applies to food additives nitrite.

2 Molecular formula and relative molecular mass

Formula 2.1

NaNO_3

2.2 Relative molecular mass

84.99 (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, or slightly pale gray, yellow Fine crystal state
Take the right amount of sample is placed in a clean, dry white porcelain dish, self Observe
the color and state of 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 nitrate (NaNO_3) content (dry basis), w /% 99.3 ~ 100.5
 Appendix A A.4 Chloride (Cl dollars), w /% ≥ 0.20 Appendix A A.5 Water, w /% ≤ 1.5 A.6
 in Appendix A Heavy metals (Pb)/(mg/kg) ≤ 5.0 GB 5009.74 Arsenic (As)/(mg/kg) ≤ 2.0
 GB 5009.76 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.
 Reagents Used in the standard solution, standard solution for measuring impurities,
 formulations 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 take the test solution, mix equal amount of sulfuric acid was
 added carefully ferrous sulfate solution (80g/L) After cooling, the liquid into two layers at the
 interface was Shows brown.

A.3.2 take the test solution, adding sulfuric acid and copper, which produce a
 reddish-brown gas heating.

A.3.3 take platinum wire, moistened with hydrochloric acid, till the first colorless flame, then
 dipped a little test solution, colorless flame burning on fire that flame was yellow.

A.4 Determination of sodium nitrate (NaNO_3) content (dry basis) of A.4.1 Method summary
 with hydrochloric acid and sodium nitrite is converted to sodium chloride to remove excess
 nitric acid and hydrochloric acid, evaporated to dryness, measuring the amount of silver
 chloride method heating.

A.4.2 Reagents and materials A.4.2.1 hydrochloric acid solution. 41.

A.4.2.2 standard silver nitrate titration solution. c (AgNO_3) = 0.1mol/L.

A.4.2.3 Potassium chromate solution. 100g/L.

A.4.2.4 litmus solution. 10g/L.

A.4.3 Analysis step

It weighs about 0.8g previously lost water when dried to a constant weight of the sample
 (sample can also be called directly, the results at 105 °C ~ 110 °C Minutes), accurate to
 0.0002g, placed in a small beaker. Add 20mL hydrochloric acid solution, cover the surface

of the dish, steam bath (or adjustable electric) on and evaporated to dryness. Plus 20mL hydrochloric acid solution to dissolve the residue and evaporated again to dryness. The litmus heating was continued until the residue is dissolved in water when it was neutral. The solution was transferred to 100mL volumetric flask, dilute to the mark. Pipette 25mL solution was placed in 150mL beaker, Add 4 drops of potassium chromate indicator solution, under uniform stirring, titration with standard silver nitrate titration solution, to show steady light orange suspension is End, while the blank test.

Blank test shall be measured in parallel, using the same analysis steps, taking the same amount of all reagents, the blank test without the sample.

A.4.4 Calculation Results Sodium nitrate (NaNO_3) content (dry basis) of the mass fraction w_1 , according to equation (A.1) Calculated.

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

$$\div \times 1000$$

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

Where.

Concentration c --- standard silver nitrate titration solution, expressed in moles per liter (mol/L);

V --- volume of the sample solution was titrated standard silver nitrate titration solution consumption in milliliters (mL);

V_0 --- blank titration volume of silver nitrate standard solution titration solution consumption in milliliters (mL);

--- The M sodium nitrate molar mass in grams per mole (g/mol), [$M(\text{NaNO}_3) = 84.99$];

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

--- Conversion factor;

1000 --- conversion factor.

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 chloride (Cl) Determination A.5.1 Method summary with GB/T 3051-2000 Chapter 3.

A.5.2 Reagents and materials A.5.2.1 urea.

A.5.2.2 other with GB/T 3051-2000 Chapter 4.

A.5.3 Instruments and Equipment Microburette. dividing the value of 0.01mL or 0.02mL.

A.5.4 Analysis step

A.5.4.1 Preparation of the reference solution in 250mL Erlenmeyer flask add 50mL water, add 3g of urea dissolved by heating. A solution of (11) in the nitric acid solution to a boil without bubbles Generating, cooling. Add 2 drops to 3 drops of bromophenol blue indicator solution, with sodium hydroxide solution (1mol/L) adjusted solution was blue, with a (113) nitrate Adjust the solution to the solution from blue to yellow and then excess 2 drops to 6 drops. Add 1mL diphenylcarbazone hydrazine indicator solution, microtiter Tube with c [2Hg (NO) 2] is about 0.05mol/L nitrate mercury standard titration solution titrated to purple. Record mercuric nitrate titration standard solution the volume of fluid. This solution was formulated before use.

A.5.4.2 Determination Weigh about 10g sample, accurate to 0.01g, placed in 250mL conical flask, add about 50mL of water, heating the sample is completely dissolved. plus 3g of urea dissolved by heating, a solution of (11) in the micro-boiling nitric acid solution, to no small bubbles, cooling, add 2 drops of bromophenol blue indicator solution, with Sodium hydroxide solution (1mol/L) was adjusted solution was blue, with a (113) was adjusted nitrate solution turns from blue to yellow and then excess 2 drops ~ 6 drops. Join 1mL diphenylcarbazone hydrazine indicator solution, using microburette concentration c [2Hg (NO) 2] is about 0.05mol/L of Mercuric nitrate titration standard solution titration solution from yellow to the reference solution with the same purple as the end point.

The mercury-containing waste is collected in a bottle after titration, according to the method GB/T 3051-2000 Annex D for processing.

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

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

$m \times 1000 \times$

100% (A.2)

Where.

Concentration c --- silver nitrate mercury standard titration solution, expressed in moles per liter (mol/L);

Volume V --- titrate the sample solution consumed nitrate mercury standard titration solution, in milliliters (mL);

Senate volume V_0 --- mercury nitrate titration solution than the standard solution consumed in milliliters (mL);

--- The M molar mass of chlorine in grams per mole (g/mol), [$M(\text{Cl}) = 35.45$];

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

1000 --- conversion factor.