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

GB 25586-2010

**National food safety standards of food additives bicarbonate,
sodium (sodium sesquicarbonate)**

(English Translation)

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21 MmV - = (A.6)

Foreword

Appendix A of this standard is a normative appendix.

National Food Safety Standard Food additive sodium bicarbonate (sodium sesquicarbonate)

1 Scope

This standard applies to sodium carbonate, sodium bicarbonate or trona as the raw materials used in the production of recrystallization food additive sodium bicarbonate (times Half sodium carbonate).

2 Normative references

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

3 Formula and relative molecular mass

Formula 3.1

$\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$

3.2 Relative molecular mass

226.03 (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. Needle-like state organization, flaky crystal or crystalline powder

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Sodium bicarbonate (NaHCO_3), w /% 35.0 ~ 38.6 Appendix A A.4 Sodium carbonate (Na_2CO_3), w /% 46.4 ~ 50.0 Appendix A A.5 Chloride (Cl dollars), w /% ≤ 0.3 Appendix A A.6 Water, w /% 13.8 ~ 16.7 Appendix A A.7 Iron (Fe)/(mg/kg) ≤ 20 Appendix A A.8 Heavy metals (Pb)/(mg/kg) ≤ 5 Appendix A A.9 Lead (Pb)/(mg/kg) ≤ 2 Appendix A A.10 Arsenic (As)/(mg/kg) ≤ 1 Appendix A A.11 TABLE 2 (cont.) Item Index Test Method Sulfate (SO_4 dollars), w /% ≤ 0.02 Appendix A A.12 Clarity through test A.13 in Appendix A Bulk density $\rho/(\text{g/mL}) \geq 0.7$ Appendix A A.14 Appendix A (Normative) Testing method A.1 Warning Reagents The standard test methods used for toxic or corrosive, be careful when operating! As should be immediately splashed on the skin Rinsed with water, severe cases should be treated immediately. Generate volatile harmful gases operations should be carried out in a fume hood.

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 Three water regulations. Used in the test standard titration solution, impurity standard solution, preparations and products, did not indicate when additional requirements are Press HG/T 3696.1, HG/T 3696.2, the provisions of HG/T 3696.3 of preparation.

A.3 Identification Test A.3.1 Identification of sodium ions Wetting platinum wire with hydrochloric acid, colorless to burn in the flame, then dipped a little in the test solution combustion flame, the flame that is bright yellow.

Identification A.3.2 carbonate Sample taken a little, the gas may produce hydrochloric acid solution (1 + 2), the gas is passed through the calcium hydroxide solution (3 g/L) in a white precipitate produce.

A.4 Determination of sodium bicarbonate A.4.1 hydrochloric acid titration (Arbitration Act) A.4.1.1 Method summary the sample was dissolved after adding a certain amount of sodium hydroxide standard titration solution, then add a solution of barium chloride reacted

with sodium carbonate was added phenol Phthalocyanine indicator, titrated with standard hydrochloric acid solution was titrated to the end point.

A.4.1.2 Reagents and materials A.4.1.2.1 carbon dioxide-free water.

A.4.1.2.2 barium chloride solution. 100 g/L.

A.4.1.2.3 sodium hydroxide standard titration solution. $c(\text{NaOH}) = 1 \text{ mol/L}$.

A.4.1.2.4 hydrochloric acid standard titration solution. $c(\text{HCl}) = 1 \text{ mol/L}$.

A.4.1.2.5 phenolphthalein indicator solution.

A.4.1.3 analysis step Weigh about 2 g samples, accurate to 0.000 2 g, placed in 400 mL beaker, add 200 mL of carbon dioxide-free cooling water solubility.

Accurately added 20 mL of sodium hydroxide standard titration solution and adding 100 mL of barium chloride solution, shake. Add 3 drops to 5 drops of phenolphthalein indicator solution, Standard titration with hydrochloric acid solution was titrated to a colorless end point exactly. At the same time a 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 Test.

A.4.1.4 Calculation Results Sodium bicarbonate content of sodium bicarbonate (NaHCO_3) mass fraction w_1 and its value is expressed in%, according to formula (A.1) calculated as follows. []

1000) 0

c_{MVV}

Where.

Numerical hydrochloric acid standard titration solution volume consumed V_0 -- blank test, in milliliters (mL);

Numerical hydrochloric acid standard titration solution consumed V -- titration solution volume in milliliters (mL);

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

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

Numerical M -- sodium bicarbonate (NaHCO_3) molar mass in grams per mole (g/mol) ($M = 84.01$).

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.4.2 NaOH titration A.4.2.1 Method summary Sample of sodium bicarbonate and sodium hydroxide, according to the volume consumed by the number of sodium hydroxide, sodium bicarbonate content calculated.

A.4.2.2 Reagents and materials A.4.2.2.1 carbon dioxide-free water.

A.4.2.2.2 sodium hydroxide standard titration solution. $c(\text{NaOH}) = 1 \text{ mol/L}$.

A.4.2.2.3 silver nitrate solution. 100 g/L .

A.4.2.3 analysis step Weigh about 8.4 g samples, accurate to 0.0002 g , placed in 250 mL beaker, add 50 mL of carbon dioxide-free cooling water solubility.

With 1 mol/L sodium hydroxide standard titration solution titration, until taking a drop of test solution of silver nitrate solution was reacted with 1 drop in microtiter plates meet when dark brown. At the same time a 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 Test.

A.4.2.4 Calculation Results Sodium bicarbonate content of sodium bicarbonate (NaHCO_3) mass fraction w_1 and its value is expressed in%, according to formula (A.2) calculated as follows. []

$1000) 0$

c_{MVV}

Where.

Numerical sodium hydroxide standard titration solution consumed V -- titration solution volume in milliliters (mL);

Numerical solution of sodium hydroxide standard titration blank test V_0 -- volume consumed in milliliters (mL);

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

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

Numerical M -- sodium bicarbonate (NaHCO_3) molar mass in grams per mole (g/mol) ($M = 84.01$).

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 sodium carbonate A.5.1 Reagents and materials A.5.1.1 hydrochloric acid standard titration solution. $c(\text{HCl}) = 1 \text{ mol/L}$.