



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

GB 1886.20-2016

**National food safety standard - Food additives - Sodium
Hydroxide**

食品安全国家标准 食品添加剂 氢氧化钠

(English Translation)

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Foreword

This Standard replaced GB 5175-2008 Food Additive - Sodium Hydroxide.

Compared with GB 5175-2008, the major change of this Standard is as follows.

--- Modify the standard name into "National Food Safety Standard - Food Additives - Sodium Hydroxide".

National Food Safety Standard - Food Additives -
Sodium Hydroxide

1 Scope

This Standard is applicable to the food additive of sodium hydroxide.

2.1 Molecular formula

NaOH

3.1 Sensory requirements

The sensory requirements shall comply with the provisions of Table 1.

Appendix A

Test Methods

A.1 Safety tips

Some of the reagents used in the test methods of this Standard are toxic or corrosive, and shall be handled with care. If it splashes on the skin, it shall be rinsed with water immediately; and the severe cases shall be treated immediately. When using toxic

drugs, it shall be managed strictly in accordance with relevant provisions; when using it, inhalation or contact with the skin shall be avoided, and it shall be carried out in a fume hood when necessary.

A.3 Identification test

A.3.1 Alkaline identification

The aqueous solution of this product can dissociate OH^- , showing a strong alkaline reaction.

A.3.2 Identification of sodium ions

Use a clean glass rod burnt with platinum wire on the top. After the platinum wire is wetted with hydrochloric acid, it burns on the flame until it turns colourless. Dip the specimen and burn it in a colourless flame. The flame turns bright yellow immediately.

A.4 Determination of total alkali content and sodium carbonate

A.4.1 Summary of the method

A.4.1.1 Determination of total alkali content (by NaOH)

The specimen solution uses bromocresol green-methyl red as the indicator solution; titrate to the end point with a hydrochloric acid standard titration solution. And the total alkali content is determined according to the consumption of the hydrochloric acid standard titration solution.

A.4.2 Reagents and materials

A.4.2.1 Barium chloride solution. 100g/L. Before use, take phenolphthalein as the indicator solution; and adjust to pink with sodium hydroxide solution.

A.4.3 Analytical procedures

A.4.3.1 Preparation of test solution

Use a weighing bottle of known mass, quickly take $38\text{g}\pm 1\text{g}$ of solid sodium hydroxide or $50\text{g}\pm 1\text{g}$ of liquid sodium hydroxide, accurate to 0.01g. Put it into a 400mL polyethylene beaker; and dissolve it with water. After cooling to room temperature, transfer to a 1000mL volumetric flask with plastic stopper; add water to dilute to the mark; shake well; and place the solution in a clean and dry polyethylene plastic bottle.

This is test solution A.

A.4.4 Calculation of the result

A.4.4.1 The mass fraction, w_1 , of the total alkali content (by NaOH) is calculated according to Formula (A.1).

The mass fraction, w_2 , of sodium carbonate (by Na_2CO_3) is calculated according to Formula (A.2).

A.4.4.2 The mass fraction, w_3 , of the total alkali content (by NaOH) of liquid sodium hydroxide expressed as the mass fraction relative to the label value, is calculated according to Formula (A.3).

A.4.4.3 The mass fraction, w_4 , of sodium carbonate (by Na_2CO_3) of liquid sodium hydroxide expressed as the mass fraction relative to the label value, is calculated according to Formula (A.4).

A.6 Determination of mercury (Hg)

A.6.1 Summary of the method

The same as 5.8.2.1 of GB/T 534-2014.

A.6.2 Reagents and materials

A.6.2.1 Sulfuric acid solution. 1+1.

A.6.2.2 Other reagents are the same as 5.8.2.2 of GB/T 534-2014.

A.6.3 Apparatus

The same as 5.8.2.3 of GB/T 534-2014.

A.6.4 Analytical procedures

A.6.4.1 Preparation of test solution

Weigh $2.00\text{g} \pm 0.01\text{g}$ of solid sodium hydroxide or a liquid specimen equivalent to $2.00\text{g} \pm 0.01\text{g}$ of solid sodium hydroxide; place it in a 100mL beaker; dissolve it in 20mL of water. Titrate 10mL of sulfuric acid solution (A.6.2.1); add 0.5mL of potassium permanganate solution; cover this beaker with watch glass; boil for a few seconds; and then cool off.

A.6.4.2 Preparation of blank test solution

Except that no specimen is added, the same treatment is performed at the same time as the test solution.

A.6.4.3 Drawing of working curve

Operate according to the 5.8.2.4.1 of GB/T 534-2014; select the standard curve with mercury content of $0\mu\text{g}\sim 1\mu\text{g}$.

A.6.4.4 Determination of specimen solution

Operate according to the 5.8.2.4.2 of GB/T 534-2014.

A.6.5 Calculation of the result

Perform according to the 5.8.2.5 of GB/T 534-2014.

A.6.6 Treatment of waste liquid containing mercury

Collect the mercury-containing waste liquid in a container of about 50L. When the waste liquid is about 40L, add 400mL of 400g/L sodium hydroxide solution, 100g of sodium sulfide ($\text{Na}_2\text{S}\cdot 9\text{H}_2\text{O}$); and shake well. After 10min, slowly add 400 mL of 30% hydrogen peroxide solution; mix well; and drain the supernatant liquid into the waste water after 24h. The sediment is transferred to another container, and the mercury is recovered by a dedicated person.

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