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

GB/T 11200.3-2008

Replacing GB/T 11200.3-1989

**Text methods of high-purity sodium hydroxide -- Part 3:
Determination of calcium content -- Flame atomic absorption
method**

高纯氢氧化钠试验方法 第3部分：钙含量的测定 火焰原子吸收法

(English Translation)

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Foreword

GB/T 11200 "high purity sodium hydroxide test method" is expected to be divided into the following three parts.

- Part 1. Determination of sodium chlorate o - tolidine spectrophotometry;
- Part 2. Determination of aluminum oxide content spectrophotometry;
- Part 3. Determination of calcium content by flame atomic absorption spectrometry.

This section GB/T 311 200 Part of the partially modified by the Japanese standards JISK1200-8-1:2000 "Industrial hydroxide Sodium Section 8 Section 1 Determination of calcium content by flame atomic absorption spectrometry "(Japanese version).

This portion JISK1200-8-1:2000 main technical differences are as follows.

- Modify the representation of calcium standard solution;
- Based on product quality status, the amount of calcium standard solution standard curve has been adjusted;
- Modify the results of the formula.

This Part replaces GB/T 11200.3-1989 "ion exchange membrane caustic soda calcium content by flame atomic absorption spectrometry." this section compared with the GB/T 11200.3-1989 The main changes are as follows.

- Modify the standard name;
- Added "foreword";
- Modify the sample size (1989 Version 6.1; 6.1 edition);

- Modify the preparation of the sample solution (1989 Version 6.1; 6.1 edition);
- Increased operating method working curves as the main agent and adding anti lanthanum chloride solution (edition 6.2);
- Based on product quality status, the amount of calcium standard solution standard curve has been adjusted (1989 Version 6.2; this version 6.2.1);
- Modified calcium oxide content is calculated (1989 version of Chapter 8; Chapter 7 of this edition).

This part is proposed by the China Petroleum and Chemical Industry Association.

This part of the National Standardization Technical Committee chlor-alkali chemical branch (SAC/TC63/SC6) centralized.

This section is drafted. Jinxi Chemical Industry Research Institute, Tangshan Jidong Chlor-Alkali Co., Ltd.

1 Scope

GB/T 11200 provisions of this part of the measuring method for industrial use sodium calcium content by atomic absorption spectrometry.

This section applies to calcium content (calcium oxide) is greater than 0.000035% of the product.

2 Normative references

The following documents contain provisions which, through reference GB/T 11200 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 9723 Chemicals flame atomic absorption spectrometry General Principle 3 the sample was acidified with hydrochloric acid by atomic absorption method, acetylene - air flame after to eliminate interferences, add lanthanum ion measurement Given calcium.

4 Reagents and materials

The method of the reagents and water, high-purity reagents and GB/T 6682 in the corresponding provisions of secondary water or pure water.

4.1

hydrochloric acid. calcium content is less than 0.000005%.

4.2

lanthanum chloride solution. 5g/L (solution of calcium content is less than 0.00001%).

4.3

Preparation of either according to the following.

a) the 5.9g lanthanum oxide (La_2O_3) was dissolved in hydrochloric acid 15mL, transferred to 1000mL volumetric flask, dilute to the mark.

b) To 13.4g of lanthanum chloride ($\text{LaCl}_3 \cdot 7\text{H}_2\text{O}$) was dissolved in water and transferred to 1000mL volumetric flask, dilute to the mark.

4.4 Sodium chloride acid solution. 58.5g/L

Weigh 29g of sodium chloride into 500mL conical flask, dissolved in water and add 250mL 40mL hydrochloric acid, boil 5min, cooled to at room temperature and transferred to 500mL volumetric flask, add water to the mark.

4.5 Calcium standard solution. 100 $\mu\text{g}/\text{mL}$

Weigh 250 °C in advance by drying and a constant amount of calcium carbonate (purity > 99.99%) 0.2497g, accurate to 0.0001g, placed 250mL beaker, then 15mL of water and 10mL of hydrochloric acid mixture injected into the beaker and then the entire solution was transferred to 1000mL capacity Flask, dilute to the mark. spare.

NOTE: You can purchase a commercially available standard solution using atomic absorption spectroscopy

4.6 Calcium standard solution. 10 $\mu\text{g}/\text{mL}$

Absorb calcium 20.0mL standard solution (4.5), placed in 200mL volumetric flask, dilute to the mark, shake before use this solution formulation.

5 Apparatus

The following general laboratory equipment and instruments.