

ICS 71.060.40
CCS G11



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

GB/T 11200.1-2025

Replacing GB/T 11200.1-2006

**Test methods of high-purity sodium hydroxide - Part 1:
Determination of sodium chlorate content**

高纯氢氧化钠试验方法 第1部分：氯酸钠含量的测定

Issued on: June 30, 2025

Implemented on: January 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1	Scope
2	Normative References
3	Terms and Definitions
4	Principle
5	Reagents or Materials
5.4	Sodium chlorate standard stock solution. 1 g/L. Weigh-take
5.5	Sodium chlorate standard solution. 10 mg/L. Use a graduated pipette to measure
6	Instruments and Equipment
6.5	Balance. with an accuracy of
6.6	Analytical balance. with an accuracy of
7	Test Procedures
8	Result Calculation...
9	Allowable Differences...
10	Test Report...

Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This document is Part 1 of GB/T 11200 Test Methods of High-purity Sodium Hydroxide. GB/T 11200 has issued the following parts.

1.Determination of Sodium Chlorate Content;

2.Determination of Aluminum Oxide Content - Spectrometric Method;

3.Determination of Calcium Contents - Flame Atomic Absorption Method. This document serves as a replacement for GB/T 11200.1-2006 Sodium Hydroxide for Industrial Use - Determination of Sodium Chlorate Content - o-Tolidine Spectrometric Method. In comparison with GB/T 11200.1-2006, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

a) The Scope is modified (see Chapter 1; Chapter 1 of Version 2006);

b) The Principle is modified (see Chapter 4; Chapter 3 of Version 2006);

c) The mass concentration of sodium hydroxide solution in reagents or materials is modified (see 5.3;

4.2 of Version 2006); a method for preparing sodium hydroxide solution is added (see 5.3); a provision that "certified standard materials may be used" for sodium chlorate standard stock solution is added (see 5.4); the preparation method for o-Tolidine indicator solution is modified (see 5.6;

4.5 of Version 2006);

d) The instruments and equipment are modified (see Chapter 6; Chapter 5 of Version 2006);

e) The test procedures are modified (see Chapter 7; Chapter 6 of Version 2006);

f) The calculation formula is modified (see Chapter 8; Chapter 7 of Version 2006); the requirement that "the calculation result shall be expressed to 5 decimal places" is added to the result calculation (see Chapter 8);

g) The requirement that "take the arithmetic mean of two parallel determination results as the reported result" is added to the allowable differences (see Chapter 9);

1 Scope

GB/T 11200.1-2025 is the Chinese national standard on test methods of high-purity sodium hydroxide - part 1: determination of sodium chlorate content, in the field of chemical technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 30 June 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2026. Classification: ICS 71.060.40, CCS G11. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the test principle for sodium chlorate content in high-purity sodium hydroxide, and specifies the reagents or materials, instruments and equipment, test procedures, result calculation, allowable differences, and test report content. This document applies to the determination of sodium chlorate content in high-purity sodium hydroxide with a mass fraction of 0.00005% ~ 0.01%.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date,

only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 603 Chemical Reagent - Preparations of Reagent Solutions for Use in Test Methods

GB/T 6682 Water for Analytical laboratory Use - Specification and Test Methods

3 Terms and Definitions

This document does not have terms or definitions that need to be defined.

4 Principle

Sodium chlorate decomposes into chlorine gas and chlorine dioxide in a strongly acidic medium. Chlorine gas and chlorine dioxide react with o-tolidine to generate a stable yellow substance. Use a spectrophotometer to determine the absorbance.

5 Reagents or Materials

5.1 Unless otherwise specified, all reagents and water used in this document refer to analytical grade reagents and Grade III water as specified in GB/T 6682 or water of equivalent purity.

5.2 Hydrochloric acid. guaranteed reagent.

5.3 Sodium hydroxide solution. 200 g/L. Weigh-take 20 g of sodium hydroxide and place it in a beaker pre-filled with 30 mL of water. Dissolve it and cool to room temperature. Then, transfer it to a 100 mL volumetric flask and dilute it to the scale.

5.4 Sodium chlorate standard stock solution. 1 g/L. Weigh-take

1.000 g of sodium chlorate, dissolve it in water, transfer it to a 1,000 mL volumetric flask, and dilute it to the scale. This solution can also be prepared using certified standard materials.

5.5 Sodium chlorate standard solution. 10 mg/L. Use a graduated pipette to measure

5.0 mL of sodium chlorate standard stock solution and place it in a 500 mL volumetric flask. Dilute it to the scale. Prepare this solution right before use.

5.6 o-tolidine indicator solution. 1 g/L. In accordance with the provisions of GB/T 603, prepare it.

6 Instruments and Equipment

6.1 Single-mark volumetric flasks. 100 mL, 500 mL and 1,000 mL.

6.2 Graduated pipettes.

6.3 Spectrophotometer.

6.5 Balance. with an accuracy of

0.01 g.

6.6 Analytical balance. with an accuracy of

0.001 g.

7 Test Procedures

---hydrochloric acid is a highly volatile and corrosive substance. Analysis shall be conducted in a well-ventilated fume hood. Even experienced personnel shall be supervised.