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

GB/T 23278.6-2009

**Methods for chemical analysis of sodium stannate - Part 6:
Determination of free alkali content - Titration**

锡酸钠化学分析方法 第6部分：游离碱的测定 中和滴定法

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Foreword

GB/T 23278 "Methods for chemical analysis of sodium stannate" is divided into eight sections.

- Part 1. Determination of tin content potassium iodate titration;
- Part 2. Determination of iron content - 1,10-phenanthroline spectrophotometry;
- Part 3. Determination of arsenic content of arsenic and antimony molybdenum blue spectrophotometric method;
- Part 4. Determination of lead content - Atomic absorption spectrometry;
- Part 5. Determination of antimony content - Malachite green spectrophotometry;
- Part 6. Determination of the free base neutralization titration method;
- Part 7. alkali insolubles - Gravimetric method;
- Part 8. Determination of nitrate ion selective electrode method. Part is divided into 6 sections. This part is proposed by the China Nonferrous Metals Industry Association. The non-ferrous metal part by the National Standardization Technical Committee. This section from Yunnan Tin Group Co., Ltd. is responsible for drafting. This section is Liuzhou China Tin Group, Yunnan Honghe Prefecture CIQ participate in the drafting. The main drafters of this section. Yangzi Hua, Xie Hui-fang, Lin cream, Shou Jie Yun Jiang Village stretch, Hu Yu Wei. Methods for chemical analysis of sodium stannate Part 6. Determination of the free base titration

1 Scope

GB/T 23278.6-2009 is the Chinese national standard on methods for chemical analysis of sodium stannate - part 6: determination of free alkali content - titration, 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 5 January 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 November 2009. Classification: ICS 71.040.40, CCS G10. 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.

--- the actual concentration of hydrochloric acid standard titration solution, expressed in moles per liter (mol/L); Ba 1

--- standard solution of sodium carbonate concentration, expressed in moles per liter (mol/L); Pipette Vp 1

--- sodium carbonate standard solution volume in milliliters (mL of); Vp 2

--- Calibration consumption volume of hydrochloric acid standard titration solution, in milliliters (mL). When the result of poor parallel calibration is not more than three cups 5 x 10-5mol/L, averaging. Otherwise, re-calibration.

2 Method summary

The sample is dissolved in water. Tin and barium chloride, sodium, generating tin, barium precipitation, the free base with tin acid radical separation. Phenolphthalein as an indication Agents, titration with hydrochloric acid standard solution titration, determination of the amount of free base.

3 Reagents

Unless otherwise indicated, in the analysis using only three of the carbon dioxide-free distilled water.

3.1 barium chloride solution (200g/L).

3.2 phenolphthalein indicator solution (10g/L).

3.3 methyl red - bromocresol green indicator solution. 30mL bromocresol green solution (1g/L) and 20mL of methyl red ethanol solution (2g/L) mixing.

3.4 standard solution of sodium carbonate (Ba 1 = 0.015mol/L). Weigh 0.3975g reference sodium carbonate (to pre-drying at 270 °C ~ 300 °C Constant weight) in 200mL beaker with water to dissolve water soluble moved into 250mL volumetric flask and dilute to volume, and mix.

3.5 hydrochloric acid standard volumetric solution (Ba HCl = 0.02mol/L).

3.5.1 preparation. Pipette 9.0mL hydrochloric acid ($\rho=1.19\text{g/mL}$), water injection 5000mL, and mix.

3.5.2 Calibration. Pipette 25.00mL (Vp 1) three standard solution of sodium carbonate (3.4), were placed in 300mL conical flask, add 10 drops Methyl red - bromomethyl cresol green indicator solution, shake, with hydrochloric acid standard volumetric solution (Vp 2) titration test solution from green to dark red, boiled 30s, cooled to room temperature and continue titration test solution to dark red. According to equation (1) calculate the actual concentration of hydrochloric acid standard titration solution of Ba. $Ba = Ba_2 \times 1$.

4 Sample

The sample should be sealed packaging. Step

5 Analysis

5.1 Sample Table 1. Weigh sample (m_1), accurate to 0.0001g.