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

GB/T 23278.2-2009

**Methods for chemical analysis of sodium stannate - Part 2:
Determination of iron content - 1, 10-phenanthroline
photometric method**

锡酸钠化学分析方法 第2部分：铁量的测定 1，10-二氮杂菲分光光度法

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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. This is Part 2. 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 Co., Ltd., Yunnan Honghe SAIEC IQ participate in the drafting. The main drafters of this section. Highland, Zhang Limei, Zhang Hongling, cream Lin, who Lihua, Jiangzhai Sheng, Zhang. Methods for chemical analysis of sodium stannate Part 2. Determination of iron content 1,10 phenanthroline spectrophotometry

1 Scope

GB/T 23278.2-2009 is the Chinese national standard on methods for chemical analysis of sodium stannate - part 2: determination of iron content - 1, 10-phenanthroline photometric method, 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.

This section GB/T 23278 specifies the method for the determination of tin in sodium iron content. This section applies to the determination of tin in sodium iron content was measured in the range of 0.00025% to 0.040%.

2 Method summary

The sample was dissolved by hydrochloric acid, tartaric acid, EDTA masking interference tin, lead coexisting elements in pH6 ~ pH7 solution with hydrochloric acid hydroxyl Amine Fe (III) reduction of Fe (II), and 1,10-phenanthroline to form a red complex in a spectrophotometer at 510nm wavelength absorption measured Luminosity.

3 Reagents

Test water for the three distilled water.

3.1 hydrochloride ($\rho=1.19\text{g/mL}$).

3.2 Hydrogen peroxide (30%).

3.3 hydrochloric acid (1 + 19).

3.4 ammonia (2 + 1).

3.5 tartaric acid solution (200g/L).

3.6 EDTA solution (25g/L).

3.7 pairs nitrophenol solution (1g/L).

3.8 hydroxylamine hydrochloride solution (100g/L). 3.9 1,10-phenanthroline solution (2.5g/L). Weigh 0.25g 1,10-phenanthroline, was dissolved in 10mL of absolute ethanol, diluted with water To 100mL.

3.10 iron standard stock solution. Weigh 0.1000g metallic iron (mass fraction $\geq 99.99\%$) in 200mL beaker, add 10mL salt Acid (3.1), cover sheet pan, add 1mL of hydrogen peroxide (3.2), heat gently to dissolve completely in time to make chlorine and boiled and cooled. Purge water table dish and cup Wall, moved into 1000mL volumetric flask, dilute to volume, and mix. This solution 1mL containing 100 μg iron.

3.11 Iron standard solution. Pipette 50.00mL iron standard stock solution in 500mL flask, add 2mL of hydrochloric acid (3.1), diluted with water To the mark, and mix. This solution 1mL containing 10 μ g iron.

4 Sample

The sample should be sealed packaging. Step

5 Analysis

5.1 Sample Table 1 sample was weighed (m1 0), accurate to 0.0001g.