ICS 73.060
CCS D41

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 1819.15-2017

Replacing GB/T 1819.15-2006

Methods for chemical analysis of tin concentrates - Part 15: Determination of fluorine content - The ion-selective electrode method

锡精矿化学分析方法 第15部分：氟量的测定 离子选择电极法

Issued on: September 29, 2017 **Implemented on: April 1, 2018**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of China

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Foreword

GB/T 1819 "tin concentrate chemical analysis method" is divided into 21 parts.

--- Part 1. Determination of moisture thermal drying method;

--- Part 2. Determination of tin content potassium iodate titration;

--- Part 3. Determination of iron content cerium sulfate titration method;

--- Part 4. Determination of lead content by flame atomic absorption spectrometry and Na2 EDTA titration;

--- Part 5. Determination of arsenic Arsenic antimony molybdenum blue spectrophotometry and iodometric titration;

--- Part 6. Determination of the amount of antimony; malachite green spectrophotometry and flame atomic absorption spectrometry;

--- Part 7. Determination of bismuth content by flame atomic absorption spectrometry;

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--- Part 13. Determination of magnesia, calcium oxide content; Flame atomic absorption spectrometry;

1 Scope

GB/T 1819.15-2017 is the Chinese national standard on methods for chemical analysis of tin concentrates - part 15: determination of fluorine content - the ion-selective electrode method, in the field of mining and minerals. 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 29 September 2017 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 April 2018. Classification: ICS 73.060, CCS D41. 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 1819 specifies the determination of fluorine content in tin concentrate. This section applies to the determination of fluorine content in tin concentrate. Measuring range. 0.010% ~ 3.00%.

2 Method summary

The sample was melted with sodium hydroxide and sodium peroxide, leached with water and filtered. The sodium citrate-potassium nitrate- Triethanolamine medium, with saturated calomel electrode as the reference electrode, fluoride ion selective electrode as the indicator electrode, with the electrode potentiometer fluoride ion concentration.

3 Reagent

Unless otherwise specified, only reagents that are identified as analytically pure and secondary water are used in the analysis.

3.1 Sodium hydroxide.

3.2 Sodium peroxide.

3.3 Nitric acid (1 4).

3.4 Sodium citrate - potassium nitrate solution Weigh 294g of trisodium citrate dihydrate (C6H5Na3O7 · 2H2O), 20g of potassium nitrate dissolved in water And diluted to 1000mL, mix well.

3.5 Triethanolamine buffer solution To 100mL triethanolamine was added 64mL hydrochloric acid (rho = 1.19g/L), with hydrochloric acid (11) and ammonia (1 1) adjusted to pH = 6.5 ~ 7.0, diluted with water to 500mL, mix.

3.6 Fluoride standard storage solution Weigh 2.2110g sodium fluoride (GR) dried in advance at 120 °C 2h in 250mL beaker, add Water completely dissolved, into 1000mL volumetric flask, diluted with water to the mark, mix well. Immediately transferred to a dry

plastic bottle to save. This solution 1mL containing 1mg fluorine.

3.7 fluoride standard solution A. Pipette 10.00mL fluorine standard stock solution (3.6) in 100mL volumetric flask, diluted with water to the mark, Mix well. Immediately transferred to dry plastic bottles for storage. 1 mL of this solution contains 100 μg of fluoride.

3.8 fluoride standard solution B. Pipette 10.00mL fluoride standard solution A (3.7) in 100mL volumetric flask, diluted with water until engraved Degree, mix well. Immediately transferred to dry plastic bottles for storage. 1 mL of this solution contains 10 μg of fluoride.

3.9 Phenol red solution Weigh 0.1g phenol red, add 6mL sodium hydroxide (2g/L) solution to dissolve, diluted with water to 50mL, and mix.

4 Instruments

4.1 Fluoride ion selective electrode. The fluorine content in the 1 x 10-6mol/L ~ 1 x 10-1 mol/L, the electrode potential and the concentration of the logarithm was linearly off system. Electrode before use should be 1 x 10-3mol/L of sodium fluoride solution soak 1h, washed with water to the washing liquid potential value is not greater than fluoride The concentration of 1 x 10-6mol/L potential value.