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YS

**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 556.6-2009

Replacing YS/T 556.6-2006

**Methods for chemical analysis of antimony concentrates. Part
6: Determination of selenium content. Hydride
generation-atomic fluorescence spectrometric method**

锑精矿化学分析方法 第6部分：硒量的测定氢化物发生-原子荧光光谱法
(English Translation)

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Foreword

YS/T 556-2009 "Methods for chemical analysis of antimony concentrate," a total of 16 parts.

- Part 1. Determination of antimony content cerium sulfate titration;
- Part 2. Determination of arsenic content potassium bromate titration;
- Part 3. Determination of lead content by flame atomic absorption spectrometry;
- Part 4. Wet water storage Gravimetric method;
- Part 5. Determination of zinc content - Flame atomic absorption spectrometry;
- Part 6. Determination of the amount of selenium by hydride generation - atomic fluorescence spectrometry;
- Part 7. Determination of the amount of mercury atomic fluorescence spectrometry;
- Part 8. Determination of sulfur content - Combustion neutralization method;
- Part 9. Determination of the amount of gold fire assay;
- Part 10. Determination of copper content - Flame atomic absorption spectrometry;
- Part 11. Determination of cadmium content by flame atomic absorption spectrometry;
- Part 12. Determination of bismuth content by flame atomic absorption spectrometry;
- Part 13. Determination of nickel content by flame atomic absorption spectrometry;
- Part 14. Determination of the amount of silver by flame atomic absorption spectrometry;
- Part 15. antimony, tin measured by hydride generation - atomic fluorescence spectrometry;
- Part 16. Determination of antimony metal content by inductively coupled plasma emission spectrometry.

This section YS/T 556 Part 6.

"Antimony concentrates - Determination of selenium content" in this section instead of YS/T 556.6-2006 (formerly GB/T 15080.6-1994).

Compared with YS/T 556.6-2006, this part of the following changes.

--- 3.3'- diaminobenzidine spectrophotometry to hydride generation - atomic fluorescence spectrometry;

--- Increasing the precision and quality assurance and control provisions.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

This section is responsible for drafting unit. tin mine Twinkling Star Antimony Industry Co., Ltd., Beijing General Research Institute of Mining and Metallurgy.

1 Scope

This section YS/T 556 specifies the method for determination of selenium content in antimony concentrate.

This section applies to the determination of antimony concentrates selenium content. Measurement range. 0.0003% to 0.050%.

2 Method summary

Sample was dissolved in aqua regia, plus masking matrix of antimony tartrate, the hydride generator, selenium and potassium borohydride hydride generation, imported by argon Quartz furnace atomizer, the fluorescence intensity was measured selenium at the atomic fluorescence spectrometer.

3 Reagents and materials

Unless otherwise indicated, the reagents used in this section refer to water and analytical grade and third grade water.

3.1

potassium borohydride.

3.2

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

Nitrate 3.3 ($\rho=1.42\text{g/mL}$).

3.4

aqua regia (when used with now).

3.5

HCl (1 + 1).

3.6

Sodium hydroxide solution (100g/L).

3.7

solution of potassium borohydride (15g/L).

Weigh 7.5g potassium borohydride (3.1), add 25mL of sodium hydroxide solution (3.6), dissolve completely, add water volume to 500mL. time cost Now equipped.

3.8

tartaric acid solution (200g/L).

3.9

standard solution.

3.9.1 Selenium standard stock solution

Weigh 0.1000g pure selenium ($\text{Se} \geq 99.99\%$) in 100mL beaker, add 5mL nitric acid (3.3), was dissolved by heating on a boiling water bath and evaporated to dryness, cooled, dissolved in water clear, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution 1mL selenium 100 μg .

3.9.2 Selenium standard solution

Pipette 1.00mL selenium standard stock solution (3.9.1) in 100mL volumetric flask, dilute with water to volume, and mix. This solution 1mL Se 1 μg .

3.9.3 Selenium standard solution

Pipette 10.00mL selenium standard solution (3.9.2) in 100mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL Selenium 0.1 μg .

3.10 material.

Argon ($\geq 99.99\%$).

4 Instrument

Atomic fluorescence spectrometer, with a special selenium hollow cathode lamp.