

ICS 73.060
CCS D 42

YS

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

YS/T 556.9-2009

Replacing YS/T 556.9-2006

**Methods for chemical analysis of antimony concentrates. Part
9: Determination of gold content. Fire assaying method**

锑精矿化学分析方法 第9部分：金量的测定火试金法

(English Translation)

Issued on: December 4, 2009

Implemented on: June 1, 2010

Issued by: Ministry of Industry and Information Technology

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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 Section 9556 of.

"Antimony concentrates - Determination of gold content analysis" of this section instead of YS/T 556.9-2006 (formerly GB/T 15080.9-1994).

Compared with YS/T 556.9-2006, this part of the following changes.

--- Determination capped by 40.00g/t extended to 100.00g/t;

--- Text format has been modified;

--- Complements 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.

This section is drafted. Hunan Chenzhou Mining Co., Ltd.

Participated in the drafting of this section. Tin Mine flash-antimony industry limited liability company, Hunan Nonferrous Metal Research Institute.

1 Scope

YS/T 556 This part provides for determination of the amount of gold in antimony concentrate.

This section applies to the determination of the amount of gold in antimony concentrate. Measuring range. 1.00g/t ~ 100.00g/t.

2 Method summary

Sample with a suitable amount of flux while melting, lead to capture the gold is separated from impurities; ash blowing through the gold, silver and base metals such as lead separation; then the use of gold is insoluble in nitric acid properties make gold and silver separation; then the determination of gold by gravimetric method.

3 Reagents and materials

Unless otherwise noted in the analysis confirmed that the use of analytical grade and above reagents and distilled or deionized water or equivalent purity.

3.1

Sodium carbonate. Industrial pure, dry, powdery.

3.2

Lead Oxide. Industrial pure gold content of less than 0.05g/t.

3.3

Silica. commercially pure ($\text{SiO}_2 > 95\%$), powdered.

3.4

Borax. Industrial pure, powder.

3.5

kno. Industrial pure, powder.

3.6

Starch. Industrial pure.

3.7

Sodium Chloride. industrial grade.

3.8

nitric acid (1 + 3), chlorine ions.

Nitric acid 3.9 (7 + 1), no chlorine ions.

3.10

silver nitrate solution (160g/L), stored in a brown bottle drops.

3.11

Test crucible. conical crucible made of refractory clay, the top of the outer diameter of 85mm ~ 95mm, the bottom of the outer diameter of 50mm ~ 60mm, high 140mm, the volume of 400mL ~ 500mL.

3.12

porcelain crucible. 30mL.

3.13

cupel. with 8.5kg of magnesium oxide containing more than 83%, particle size 0.15mm ~ 0.25mm of magnesia and number 1.5kg425 Portland cement Mud, mix well, add water and mix 1kg, with gray dish machine pressed into a diameter of about 35mm, 17mm depth of about ash pan, and one month after the natural drying use.

4 Equipment and instruments

4.1

box-type furnace. maximum temperature of 1350 °C.

4.2

box-type furnace. maximum temperature of 950 °C.

4.3

Balance. a sense of the amount of 0.01g.

4.4

Balance. a sense of the amount of 0.01mg.

4.5

Balance. a sense of the amount of 0.001mg.

5 Sample

5.1

Sample size should be less than 0.100mm.