

ICS 77.120.01
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**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 239.2-2010

Replacing YS/T 239.2-1994

**Methods for chemical analysis of antimony trisulfide. Part 2:
Determination of combined sulfur content.
Combustion-neutralization titration method**

三硫化二锑化学分析方法 第2部分：化合硫量的测定燃烧中和滴定法
(English Translation)

Issued on: November 22, 2010

Implemented on: March 1, 2011

Issued by: Ministry of Industry and Information Technology

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Foreword

YS/T 239 "Methods for chemical analysis of antimony trisulfide" There are seven sections.

- Part 1. Determination of antimony content cerium sulfate titration;
- Part 2. Determination of the amount of sulfur compounds and combustion titration method;
- Part 3. Determination of free sulfur content and combustion titration method;
- Part 4. aqua regia insolubles - Gravimetric method;
- Part 5. Determination of arsenic content of arsenic molybdenum blue spectrophotometric method;
- Part 6. Determination of iron content of phenanthroline spectrophotometry;
- Part 7. Determination of lead content by flame atomic absorption spectrometry.

This section is in accordance with GB/T 1.1-2009 given rules drafted.

This is Part 2.

The partial replacement of YS/T 239.2-1994 "Determination of sulfur compounds of antimony trisulfide Methods for chemical analysis of barium sulfate gravimetric method." versus YS/T 239.2-1994 compared to this part of the following changes.

- Barium sulfate gravimetric method to combustion and methods;
- Text format has been modified;
- Complements the precision and quality assurance and control provisions.

This standard by the national non-ferrous metals Standardization Technical Committee (SAC/TC243) centralized.

1 Scope

This section YS/T 239 specifies the method for determination of antimony trisulfide in the amount of sulfur compounds.

This section applies to antimony trisulfide compound in the determination of sulfur content. Measurement range. mass fraction of sulfur compounds 24.50% ~ 28.50%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

YS/T 239.3 trisulfide chemical analysis of antimony - Determination of free sulfur content and combustion titration method

3 Method summary

High temperature combustion of oxygen in the sample stream is converted to sulfur dioxide, hydrogen peroxide absorbed and converted to sulfuric acid to methyl red - methylene Blue solution as indicator, titrated with sodium hydroxide standard titration solution. The results obtained by subtracting the amount of free sulfur.

4 Reagents

Unless otherwise indicated, the reagents used in this section refer to water and recognized analytical reagent and tertiary water.

4.1

potassium hydroxide.

4.2

anhydrous calcium chloride.

4.3

hydrogen peroxide solution (119).

4.4

phenolphthalein indicator (10g/L ethanol).

4.5

methyl red - methylene blue mixed indicator. 20 parts of methyl red ethanol solution (0.3g/L) and 3 parts of methylene blue solution (1g/L) and mixed.

4.6

sodium hydroxide standard titration solution [$c(\text{NaOH})$ about 0.2mol/L].

4.6.1

preparation. Weigh 8g sodium hydroxide, placed in 250mL beaker, after cooling of freshly boiled water to dissolve and transferred to 1000mL capacity Dilution bottle with the new boiling cooling water to volume, and mix. Stored in plastic bottles.

4.6.2

Calibration. Weigh 1.0000g three previously 100 °C ~ 105 °C drying 2h potassium hydrogen phthalate (reference reagent) and placed 300mL conical flask, add water to dissolve 60mL, add 2 drops of phenolphthalein (4.4), (4.6) titrated with sodium hydroxide standard titration solution to light red is the end.

Along with the calibration blank test.

According to equation (1) calculate the standard volumetric sodium hydroxide solution (4.6) of the actual concentration.

$c = m \times 1000 (V_1 - V_0) \times 204.2$ (1) where.

c --- sodium hydroxide standard titration solution (4.6) of the actual concentration in units of moles per liter (mol/L);