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

YS/T 239.5-2010

**Methods for chemical analysis of antimony trisulfide. Part 5:
Determination of arsenic content. Arsenic molybdenum blue
spectrophotometric method**

三硫化二锑化学分析方法 第5部分：砷量的测定砷钼蓝分光光度法
(English Translation)

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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 is Part 5.

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

Division into new parts.

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 arsenic, antimony trisulfide amount.

This section applies to the determination of arsenic, antimony trisulfide amount.

Measurement range. 0.010% mass fraction of arsenic to 0.25%.

2 Method summary

Sample was dissolved with sulfuric acid, hydrochloric acid solution in not less than 9mol/L, the arsenic trichloride was extracted with benzene to coexist with the substrate, and other miscellaneous Mass separation. After back-extracted with water and oxidized to pentavalent arsenic and arsenic, plus ammonium molybdate and hydrazine sulfate generate arsenic molybdenum blue wavelength spectrophotometer Measuring the absorbance at 660nm.

3 Reagents

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

3.1

sulfate (rho1.84g/mL).

3.2

hydrochloride (rho1.19g/mL).

3.3

benzene.

3.4

sulfate (120).

3.5

sulfate (11).

Sulfite 3.6 (12).

3.7

Sodium hydroxide solution (300g/L). stored in a plastic bottle.

3.8

Sodium hydroxide solution (50g/L). stored in a plastic bottle.

3.9

iodine solution (5g/L). Weigh 0.5g iodine, 1g of potassium iodide in 250mL beaker, 5mL water was added to dissolve, dilute to 100mL, stored in a brown bottle.

3.10

ammonium molybdate solution (15g/L). Weigh 1.5g of ammonium molybdate $[(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}]$ placed in 250mL beaker, add 40mL water, add 50mL sulfuric acid (3.5), transferred to a glass bottle after cooling. Diluted with water to 100mL, and mix.

3.11

hydrazine sulfate solution (0.5g/L).

3.12

phenolphthalein indicator (1g/L ethanol).

3.13 Arsenic standard stock solution

Weigh 0.1320g trioxide ($w_{As_2O_3} \geq 99.9\%$, advance through the 100 °C ~ 110 °C drying 2h placed in the dryer to cool to room Temperature), sodium hydroxide solution was added 20mL (3.8) was dissolved clear, was added 100mL of water, 10 mL of sulfuric acid (3.5) and transferred to 1000mL capacity Dilution bottle with water to volume, and mix. This solution 1mL arsenic 100 μ g.

3.14 Arsenic standard solution

Pipette 10.00mL arsenic standard stock solution (3.13) in 100mL volumetric flask, dilute with water to volume, and mix. This solution 1mL Arsenic 10 μ g.