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

YS/T 239.6-2010

**Methods for chemical analysis of antimony trisulfide. Part 6:
Determination of iron content. Neighbouring phenanthroline
spectrophotometric method**

三硫化二锑化学分析方法 第6部分：铁量的测定邻二氮杂菲分光光度法
(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.

Part is divided into 6 sections.

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 provides for antimony trisulfide determination of iron content.

This section applies to the determination of antimony trisulfide iron content. Measurement

range. mass fraction of iron 0.030% to 0.40%.

2 Method summary

Sample and dissolved in nitric acid with hydrochloric acid, add potassium sodium tartrate complex antimony, adjust the color with sodium acetate solution acidity, added hydroxylamine hydrochloride, trivalent Iron is reduced to ferrous iron, and then with phenanthroline to form a colored complex, the absorbance is measured in a spectrophotometer at a wavelength of 510nm.

3 Reagents

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

3.1

hydrochloride (rho1.19g/mL).

Nitrate 3.2 (rho1.42g/mL).

3.3

Ammonia (rho0.90g/mL).

3.4

chloroform.

3.5

hydrochloride (11).

3.6

phenanthroline solution (2.5g/L).

3.7

hydroxylamine hydrochloride solution (100g/L).

3.8

sodium acetate solution (200g/L).

3.9

potassium sodium tartrate solution (250g/L).

3.10 Standard stock solution of iron

Weigh 0.1000g iron ($w_{Fe} \geq 99.99\%$) placed in 100mL beaker, add 10mL of nitric acid (3.2), heat gently to dissolve to clear, Get rid of nitrogen oxides boiling, remove the cooling to

room temperature. Moved into 1000mL volumetric flask, supplemented with 40mL of nitric acid (3.2), diluted with water to Volume, and mix. This solution 1mL iron 100 μ g.

3.11 Iron standard solution

Pipette 10.00mL iron standard stock solution (3.10) in 100mL volumetric flask, dilute with water to volume, and mix. This solution 1mL Iron 10 μ g.

4 Instrument

Spectrophotometer.

5 Sample

5.1

Sample size should be less than 0.100mm.