

ICS 77.120.60
CCS H 13

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

YS/T 1149.4-2016

**Methods for chemical analysis of zinc concentrate roasting.
Part 4: Determination of soluble sulfur content. Barium sulphate
gravimetric method**

锌精矿焙砂化学分析方法 第4部分：可溶硫量的测定 硫酸钡重量法
(English Translation)

Issued on: July 11, 2016

Implemented on: January 1, 2017

Issued by: Ministry of Industry and Information Technology

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Foreword

YS/T 1149 "Zinc concentrate calcite chemical analysis method" is divided into the following eight parts.

- Part 1. Determination of zinc content - Na₂EDTA titration;
- Part 2. Determination of acid and zinc content - Na₂EDTA titration;
- Part 3. Determination of sulfur content - Combustion neutralization titration;
- Part 4. Determination of soluble sulfur - Barium sulfate gravimetric method;
- Part 5. Determination of iron content - Na₂EDTA titration;
- Part 6. Determination of acid soluble iron - Flame atomic absorption spectrometry and Na₂EDTA titration;
- Part 7. Determination of silica content - Molybdenum blue spectrophotometric method;
- Part 8. Determination of acid - soluble silica - Molybdenum blue spectrophotometric method.

This section is part 4 of YS/T 1149.

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

This part of the National Nonferrous Metals Standardization Technical Committee (SAC/TC243) proposed and centralized.

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Chemical Analysis of Zinc Concentrate Part 4. determination of soluble sulfur content
Barium sulfate gravimetric method

1 Scope

This part of YS/T 1149 specifies the determination method for the amount of soluble sulfur in the concentrate of zinc concentrate.

This part is applicable to the determination of soluble sulfur content of zinc concentrate. The measurement range is 0.10% ~ 5.00%.

2 Method summary

Soluble sulfate in the sample is leached with boiling water, and barium sulfate is precipitated with barium chloride in a slightly acidic solution, filtered, washed and washed the amount of sulfur in the sample is calculated from the mass of barium sulfate.

3 Reagent

Unless otherwise stated, the reagents used in this section are analytical reagents and distilled or deionized water in accordance with national or industry standards.

Or a fairly pure water.

3.1

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

3.2

ammonia ($\rho=0.90\text{g/mL}$).

3.3

Hydrochloric acid (1 1).

3.4

Ammonia (1 1).

3.5

sodium acetate solution (100g/L).

3.6

citric acid solution (200 g/L).

3.7

barium chloride solution (200g/L). Weigh 200g barium chloride, dissolved in water and diluted to 1000mL, filtered and used.

3.8

barium chloride solution (20g/L). use with barium chloride solution (3.7) diluted.

3.9

silver nitrate solution (10g/L). Weigh 0.5g silver nitrate, diluted with water and diluted to 50mL, mix and store in a brown bottle.

3.10

methyl orange indicator (1g/L). Weigh 0.1g methyl orange, dissolved in water and diluted to 100mL, filtered and used.

4 Instruments

Muffle stove.

5 Samples

5.1

Specimens shall pass through 0.100mm sieve.

5.2

The sample is pre-dried at $105^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 1 h, placed in a desiccator to cool to room temperature, and then sealed with a sealed plastic bag.