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

YS/T 1149.7-2016

**Methods for chemical analysis of zinc concentrate
roasting--Part 7: Determination of silicon dioxide
content--Molybdenum blue spectrophotometry**

锌精矿焙砂化学分析方法 第7部分：二氧化硅量的测定 钼蓝分光光度法
(English Translation)

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Table of Contents

Foreword
1 Scope
2 Method summary
3 Reagent
4 Instruments

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 7 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 7. determination of the amount of silica
Molybdenum blue spectrophotometric method

1 Scope

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

This part applies to the determination of the amount of silica in the concentrate of zinc concentrate. The measurement range is 0.50% ~ 4.00%.

2 Method summary

The sample was melted with sodium hydroxide at 650 ° C and then leached with dilute sulfuric acid. In the sulfuric acid medium, silicon and ammonium molybdate were used to form silicon-molybdenum heteropoly acid, the ascorbic acid reduces the molybdenum heteropoly acid to molybdenum blue. The absorbance was measured at a wavelength of 650 nm at a spectrophotometer.

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

sodium hydroxide. excellent grade pure.

3.2

Sulfuric acid (ρ 1.84g/mL).

3.3

ammonia (ρ 0.90g/mL).

3.4

Sulfuric acid (1 1).

3.5

Sulfuric acid (1.9).

3.6

Ammonia (1.1).

3.7

Ammonium molybdate (50 g/L).

3.8

ascorbic acid (20g/L), with the current distribution.

3.9

p-nitrophenol solution (1 g/L).

3.10

reduction solution. ascorbic acid (3.8) and sulfuric acid (3.4) by 1.2 ratio of mixing, with the current distribution.

3.11

Silica standard storage solution. accurately weighed 0.5000g grade pure silica [pre-950 °C for 30min, placed in dry Cool to room temperature] in a platinum crucible containing 5 g of a mixed flux (two parts of anhydrous sodium carbonate and one part of potassium carbonate), mixed and then covered Cover 2g mixed flux, placed in 900 °C ~ 950 °C high temperature furnace melting 1h, slightly cold, crucible outside the water washed and placed in 300mL polytetrafluoroethylene in the beaker, add 150 mL of hot water to drain, wash the crucible, cool, move into a 500 mL volumetric flask, dilute to the mark with water, mix well. Stored in Plastic bottles. 1 mL of this solution contains 1 mg of silica.

3.12

Silica standard solution. Remove 5.00 mL of silica standard storage solution (3.11) in a 100 mL plastic volumetric flask with water Dilute to the mark and mix well. This solution contains 1 mL of 50 µg of silica.

4 Instruments

Spectrophotometer.