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YS

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

YS/T 555.2-2009

Replacing YS/T 555.2-2006

**Methods for chemical analysis of molybdenum concentrate.
Determination of silicon dioxide content. Silicon molybdenum
blue spectrophotometry and gravimetry**

钼精矿化学分析方法二氧化硅量的测定硅钼蓝分光光度法和重量法

(English Translation)

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Foreword

YS/T 555 "Molybdenum concentrate chemical analysis method" includes 11 parts.

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This part replaces YS/T 555.2-2006 "Determination of the amount of silica in molybdenum concentrate chemical analysis" (GB/T 15079.2-1994).

The main changes in this part compared with YS/T 555.2-2006 are as follows.

--- increase the precision terms;

--- The text format has been modified to supplement the quality assurance and control terms.

This part of the National Nonferrous Metals Standardization Technical Committee proposed and centralized.

This part is responsible for drafting units. Jinduicheng Molybdenum Industry Group Co., Ltd., China Nonferrous Metals Industry Standard Measurement Quality Institute.

This part participates in the drafting unit. Luoyang Luanchuan Molybdenum Group Co., Ltd., Jiangxi Copper Company (Dexing) Mine New Technology Development Co., Ltd.
the company.

1 Method, silicon molybdenum blue spectrophotometric method

1 Scope

This method specifies the determination of silica content in molybdenum concentrates.

This method is suitable for the determination of silica content in molybdenum concentrate.
Measuring range. 0.10% ~ 3.0%.

2 Method summary

The samples were melted and decomposed with sodium hydroxide in a silver crucible. Silicon and molybdate were formed in the weak acid medium to form a silicon molybdenum yellow heteropoly acid, with sulfuric acid and lemon Citric acid to eliminate phosphorus and arsenic interference, with ascorbic acid to silicon molybdenum yellow reduced to silicon molybdenum blue, spectrophotometer at 660nm measured absorbance.

3 Reagent

Unless otherwise stated, only the reagents identified as analytical reagents and distilled or deionized water or comparable purity were used in the analysis.

3.1

Sodium hydroxide.

3.2

mixed flux. 2 parts of anhydrous sodium carbonate and 1 part of anhydrous potassium carbonate mixed research fine.

3.3

Nitric acid solution (3 + 97).

3.4

hydrochloric acid solution (1 + 1).

3.5

sulfuric acid solution (2 + 8).

3.6

Ammonium molybdate solution (100g/L). Weigh 10g ammonium molybdate dissolved in 100mL distilled water, filtered and stored in plastic bottles.

3.7

sulfuric acid - citric acid mixture. Weigh 15g citric acid dissolved in 100mL sulfuric acid (3.5).

3.8

ascorbic acid solution (10g/L). Weigh 1g ascorbic acid and dissolve in 100mL sulfuric acid-citric acid mixture (3.7) Now with).

3.9

Silica standard storage solution. Weigh 0.5000 g of dioxane which was previously melted at 1000 ° C for 1 h and cooled to room temperature in a desiccator (Reference reagent) was placed in a platinum crucible containing 5 g of a mixed flux (3.2), and a mixed flux of about 2 g was covered thereon, 1000 °C muffle furnace burning 30min. Remove the cooling, into the 300mL polytetrafluoroethylene beaker, with hot water leaching, wash crucible, Heated to the solution clear, cooled, into the 500mL volumetric flask, diluted with water to the scale, mix, immediately transferred to the plastic bottle storage, the solution 1 mL containing 1 mg of silica.

3.10

Silica standard solution. Remove 20.00mL silica standard storage solution (3.9), placed in a 200mL volumetric flask, Dilute to the mark and mix well. Immediately transferred to the plastic bottle, the solution 1mL containing 100µg of silicon dioxide.

4 Instruments

Spectrophotometer.

5 Samples

Samples should be pre-off oil and moisture, the particle size should be less than 0.090mm. The sample should be baked at 100 °C ~ 105 °C for 1h, placed in dry