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YS

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

YS/T 358.7-2011

**Methods for chemical analysis of tantalite, columbite
concentrate. Part 7: Determination of iron content. Inductively
coupled plasma atomic emission spectrometry**

钽铁、铌铁精矿化学分析方法 第7部分：铁量的测定电感耦合等离子体发射光谱
法

(English Translation)

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Foreword

YS/T 358 "iron tantalum, niobium, iron ore chemical analysis method" includes 12 parts.

- Part 1. tantalum, niobium determining the amount of the paper color layer weight method;
- Part 2. Determination of titanium dioxide content of the double security for DAM spectrophotometry;
- Part 3. Determination of silicon dioxide content and weight of molybdenum blue spectrophotometric method;
- Part 4. Determination of tungsten trioxide content of thiocyanate spectrophotometric method;
- Part 5. uranium content - Inductively coupled plasma atomic emission spectrometry;
- Part 6. thorium oxide content - Inductively coupled plasma atomic emission spectrometry;
- Part 7. Determination of iron content by inductively coupled plasma atomic emission spectrometry;
- Part 8. Determination of the amount of ferrous dichromate method;
- Part 9. Determination of antimony content by inductively coupled plasma atomic emission spectrometry;
- Part 10. Determination of tin content potassium iodate titration;
- Part 11. Determination of the amount of manganese atomic absorption spectrometry;
- Part 12. Determination of hygroscopic water gravimetric method.

This section YS/T Section 7358 of.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) centralized.

This section is drafted. Ganzhou Nonferrous Metallurgy Research Institute, Jiujiang Tantalum Niobium limited liability company, Conghua Tantalum-Niobium smelter.

1 Scope

This method specifies iron tantalum, niobium determination of iron content in iron ore concentrate.

This method is suitable for iron, tantalum, niobium, iron ore concentrate iron contents. Determination of the range of 0.50% to 20.00%.

2 Method summary

Sample decomposition with molten potassium pyrophosphate, oxalate complex in sulfuric acid medium, ionized argon plasma source, direct inductive coupling Plasma Atomic Emission Spectrometry.

3 Reagents

3.1

potassium pyrosulfate.

3.2

sulfate (19).

3.3

oxalic acid solution. 50g of oxalic acid dissolved in 1000mL sulfuric acid (3.2) in.

3.4

iron standard stock solution. Weigh 1.0000g metal wire [$w(\text{Fe}) \geq 99.95\%$, before use wipe the surface oxide layer], to 250mL Beaker, 120mL of hydrochloric acid (11), set in boiling water to dissolve completely cooled and transferred to the bath 1000mL volumetric flask, diluted with water to the mark Degree, and mix. 1mL of this solution is equivalent to 1mg iron.

3.5

iron standard solution. Pipette 10.00mL iron standard stock solution (3.4) in 100mL flask with hydrochloric acid (119) was diluted to the mark Degree, and mix. 1mL of this solution is equivalent to 100 μg iron.

3.6

Argon w (Ar) $\geq 99.99\%$.

4 Instrument

Inductively coupled plasma atomic emission spectroscopy. Resolution 5 Sample

5.1 Sample size of less than 0.074mm.

5.2 sample was pretreated at 105 °C ~ 110 °C drying 2h, placed in a desiccator to cool to room temperature.

Step 6 Analysis

6.1 Sample

Table 1. Weigh the sample (5), accurate to 0.0001g.