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

YS/T 358.8-2011

**Methods for chemical analysis of tantalite, columbite
concentrate. Part 8: Determination of ferrous content.
Potassium dichromate titrimetric method**

钽铁、铌铁精矿化学分析方法 第8部分：亚铁量的测定重铬酸钾滴定法
(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 8358 of.

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

This section is drafted. Ganzhou Nonferrous Metallurgy Research Institute, a limited liability company Jiujiang tantalum-niobium, tantalum and niobium ore Yichun, Conghua Tantalum-Niobium smelter.

1 Scope

This method specifies iron tantalum, niobium Determination of ferrous iron content in concentrate.

This method is suitable for iron, tantalum, niobium concentrate ferrous iron contents. Measurement range of 0.50% to 10.00%.

2 Method summary

Sample in the case of absence of air, after decomposition with hydrochloric acid and sodium fluoride, sulfuric acid - phosphoric acid medium to diphenylamine sulfonate as indicator with potassium dichromate standard solution titration, calculate the amount of iron.

3 Reagents

3.1

sodium bicarbonate.

3.2

sodium fluoride.

3.3

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

3.4

hydrochloride (11).

3.5

sulfuric acid - phosphoric acid mixture. sulfuric acid was slowly added to the water to 150mL, 150mL phosphate was added after cooling water to sparse 1000mL, and mix.

3.6

tin dichloride solution (100g/L). Weigh 10g tin dichloride, dissolved in 20mL of hydrochloric acid (3.3), and diluted with water to 100mL, Mix well.

3.7

potassium dichromate solution (0.05g/L).

3.8

ferrous ammonium sulfate solution. Weigh 39.2g ammonium ferrous sulfate, sulfuric acid dissolved in 100mL (11), diluted with water to 1000mL.

3.9

sodium tungstate solution (250g/L). Weigh 25g of sodium tungstate was dissolved in 95mL of water, add 5mL phosphoric acid, and mix.

3.10

titanium trichloride solution (19). Pipette 10mL titanium trichloride solution (150g/L) in 100mL flask, diluted with water to the mark Degree, and mix.

3.11

diphenylamine sodium solution (10g/L).

3.12

potassium dichromate standard solution. Weigh 2.0000g potassium dichromate in 500mL beaker with a small amount of water diluted with water to dissolve 5L, shake.

3.13

Iron standard solution.

3.13.1

preparation. Weigh 2.8594g ferric oxide [$w(\text{Fe}_2\text{O}_3) \geq 99.99\%$] placed in 250mL beaker covered with a watch glass, plus Into 100mL of hydrochloric acid (3.3), heated to dissolve completely removed after cooling transferred to 1000mL volumetric flask, add 400mL of hydrochloric acid (3.4) with water Volume. 1mL of this solution is equivalent to 2mg iron.

3.13.2

Calibration. Pipette 20.00mL iron standard solution (3.13.1) in 300mL conical flask was heated to a boil, hot solution of dichloride Tin solution (3.6), the solution changed from yellow to pale yellow, cooled to room temperature, 20mL sulfuric acid - phosphoric acid mixture (3.5), add 7 drops of sodium tungstate Solution (3.9), with a solution of titanium trichloride (3.10) and adjusted to emerging excess drop of blue, and then potassium dichromate solution (3.7) adjusted to colorless, plus