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

YS/T 1047.3-2015

**Methods for chemical analysis of copper magnetite. Part 3:
Determination of copper and iron contents. Sodium hyposulfite
titration**

铜磁铁矿化学分析方法 第3部分：铜量和铁量的测定硫代硫酸钠滴定法

(English Translation)

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Table of Contents

Foreword

1 Scope

2 Normative references

3 Method summary

4 Reagents

Foreword

YS/T 1047-2015 "Methods for chemical analysis of copper magnetite" is divided into 11 sections.

--- Part 1. Determination of copper content of 2,2'-quinoline spectrophotometry and flame atomic absorption spectrometry;

--- Part 2. Determination of total iron content of dichromate method;

--- Part 3. Copper and iron - Determination of the amount of sodium thiosulfate titration;

--- Part 4. Determination of the amount of sulfur by high frequency combustion infrared absorption spectroscopy;

--- Part 5. Determination of phosphorus content titration;

--- Part 6. copper, total iron, silica, alumina, calcium oxide, magnesium oxide, titanium oxide, manganese and phosphorus contents - wave Long-dispersive X-ray fluorescence spectrometry;

--- Part 7. copper, manganese, aluminum, calcium, magnesium, titanium and phosphorus content - Inductively coupled plasma atomic emission spectrometry;

--- Part 8. silicon dioxide content - Gravimetric method;

--- Part 9. Determination of metallic iron content of sulfonic acid spectrophotometry;

--- Part 10. Determination of the amount of ferrous oxide dichromate method;

--- Part 11. Determination of the amount of magnetic iron dichromate method.

This is Part 3.

This section drafted in accordance with GB/T 1.1-2009 given rules.

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

This section is responsible for drafting unit. People's Republic of China Bayuquan Exit Inspection and Quarantine.

1 Scope

YS/T 1047 This section specifies the amount of copper and iron determination of the amount of copper magnetite.

This section applies to the rapid determination of the amount of copper and copper magnetite iron content. Copper content measurement range (mass fraction) 0.10% - 2.50%; Iron content measurement range (mass fraction) was 38.00% ~ 62.00%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 6379.2 measurement methods and results of Accuracy (trueness and precision) - Part 2. Determine the standard measurement method to repeat of the basic methods of reproduction Laboratory use specifications and test methods GB/T 6682 Analysis GB/T 6730.3 chemical analysis of iron gravimetric method for the determination of hygroscopic moisture in analytical samples GB/T 10322.1 iron ore sampling and sample preparation methods GB/T 12805 Laboratory glassware Burettes GB/T 12806 Laboratory glassware single marking flask GB/T 12808 Laboratory glassware single marking pipette

3 Method summary

Sample decomposition by hydrochloric acid and nitric acid, hydrofluoric acid after waving silicon ammonium acetate, ammonium hydrogen fluoride mask iron ions, the pH of the solution was adjusted Between 3.0 to 4.0, by iodometric titration method to copper; in the solution after titration, an excess of aluminum chloride solution to release the masked Iron with hydrochloric acid to adjust the pH value between 1.2 to 2.2, by iodometric titration iron.

4 Reagents

Unless otherwise stated, use only in the analysis confirmed analytically pure reagents and in line with two water GB/T 6682 regulations.

4.1

ferric oxide. reference reagents.

4.2

potassium iodide.

4.3

anhydrous sodium carbonate.

4.4

sodium bicarbonate.

4.5

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

4.6

hydrochloride (11).

4.7

nitric acid ($\rho = 1.42\text{g/mL}$).