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

YS/T 1046.6-2015

**Methods for chemical analysis of copper slag concentrates.
Part 6: Determination of aluminum oxide content. Inductively
coupled plasma atomic emission spectrometry**

铜渣精矿化学分析方法 第6部分：三氧化二铝量的测定电感耦合等离子体原子发射光谱法

(English Translation)

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Foreword

YS/T 1046-2015 "copper slag concentrates chemical analysis method" is divided into seven sections.

- Part 1. Determination of copper content iodometry;
- Part 2. Determination of gold and silver atomic absorption spectroscopy and fire assay gravimetric method;
- Part 3. Determination of sulfur content of combustion titration method;
- Part 4. Determination of iron content dichromate method;
- Part 5. Determination of the amount of silica silicon potassium fluoride titration;
- Part 6. aluminum oxide content - Inductively coupled plasma atomic emission spectrometry;
- Part 7. arsenic, antimony, bismuth, lead, zinc, magnesium oxide content - Inductively coupled plasma atomic emission spectrometry.

Part is divided into 6 sections.

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. Daye Nonferrous Metals Group Holdings Limited, Zhongtiaoshan Nonferrous Metals Group Co., Ltd.

This section is drafted. Beijing Nonferrous Metal Research Institute.

It participated in the drafting of this section. Daye Nonferrous Metals Group Holdings Co.,

Ltd., Tongling Nonferrous Metals Group Holdings Co., Ltd., Beijing Mine Metallurgical Research Institute, Jinchuan Group Co., Jiangxi Copper Company Limited, Zijin Mining Group Co., Ltd.

1 Scope

This section YS/T 1046 specifies the method for determination of copper slag concentrate aluminum oxide content.

This section applies to the determination of copper slag concentrate aluminum oxide content. Measurement range of 1.00% to 5.00%.

2 Method summary

Sample by the use of hydrochloric acid and nitric acid and sodium hydroxide dissolved in molten sodium peroxide, inductively coupled plasma spectrometer measured.

3 Reagents

Unless otherwise indicated, used in the analysis confirmed only for the gifted class pure reagents, the water is a water.

3.1

sodium hydroxide.

3.2

sodium peroxide.

3.3

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

3.4

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

3.5

nitric acid (11).

3.6

hydrochloric acid (595).

3.7

Aluminum Standard stock solution. Weigh 0.1000g of aluminum ($w_{\text{Al}} \geq 99.99\%$), placed in a beaker of 200mL, 10mL of nitric acid was added (3.5), after dissolved by heating, boiling, remove the cooled and transferred to 100mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL 1000 μg aluminum.

3.8

aluminum standard solution. Pipette 10.00mL aluminum standard stock solution (3.7) in 100mL volumetric flask, dilute with water to volume, and mix.

This solution 1mL containing 100 μ g aluminum.

3.9

Argon ($w_{Ar} \geq 99.99\%$).

4.1 Instruments and resolution

Inductively coupled plasma atomic emission spectrometer.

Under optimum working conditions for those who can reach the following indicators can be used.

--- Resolution. The 200nm optical resolution of not more than 0.008nm; at 400nm optical resolution no greater than 0.020nm.

--- Instrument stability. Under optimum working conditions, with aluminum standard solution measurement 1.0 μ g/mL of 11 times, the light intensity of the phase the standard deviation does not exceed 2.5%.

4.2 Analysis of line

Analysis line wavelength aluminum elements recommended as 396.125nm.