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

YS/T 252.2-2007

**Methods for chemical analysis of nickel matte. Determination of
iron content. Sulfosalicylic acid photometric method**

高镍铈化学分析方法铁量的测定磺基水杨酸光度法

(English Translation)

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Foreword

YS/T 252 "Methods for chemical analysis of nickel matte" is divided into five parts:

YS/T 252.1 Methods for chemical analysis of nickel matte - Determination of nickel content - Dimethylglyoxime gravimetric method

YS/T 252.2 Methods for chemical analysis of nickel matte - Determination of iron content - Sulfosalicylic acid photometric method

YS/T 252.3 Methods for chemical analysis of nickel matte - Determination of cobalt content - Flame atomic absorption spectrometric method

YS/T 252.4 Methods for chemical analysis of nickel matte - Determination of cobalt content - Sodium thiosulphate titrimetric method

YS/T 252.5 Methods for chemical analysis of nickel matte - Determination of sulfur content - Combustion-neutralization titrimetric method

This Part is Part 2.

This Part replaces YS/T 252.2-1994 "Determination of iron content by sulfosalicylic acid photometric method". Compared with YS/T 252.2-1994, this Part mainly has the following changes:

- ADJUST the sample amount from 0.200 g or 0.500 g to 0.400 g according to the

iron content;

- MODIFY the dispensing volume of the test solution from 2.00 mL to 10.00 mL;
- ADJUST the cuvette 3 cm to 1 cm;
- ADJUST the working curve range from (0 ~ 0.5) mg/100 mL to (0 ~ 1.5) mg/100 mL;
- ADD the repeatability limits, supplementing quality assurance and control terms.

This Part was proposed by AND shall be under the jurisdiction of the National Technical Committee for Standardization of Nonferrous Metals.

Responsible drafting organization of this Part: Jinchuan Group Co., Ltd.

Participated drafting organization of this Part: Guangzhou Nonferrous Metals Research Institute, Beijing General Research Institute of Mining and Metallurgy.

1 Scope

This Part specifies the method for determination of iron content in high nickel matte.

This Part is applicable to the determination of iron content in high nickel matte.

Measuring range: 0.5% ~ 7%.

2 Method summary

The sample is decomposed with hydrochloric acid, nitric acid-potassium chlorate saturated solution. In the hydrochloric acid medium of pH1.5 ~ pH3.0, iron (III) and sulfosalicylic acid form a reddish-brown complex, whose absorbance is measured at the wavelength of 545 nm with a spectrophotometer. Calculate the iron content according to the standard curve method.

3.5 Nitric acid-potassium chlorate saturated solution: Dissolve potassium chlorate in

nitric acid (3.3) until saturated.

3.6 Sulfosalicylic acid solution (100 g/L): Weigh 10 g of sulfosalicylic acid. Dissolve

it in water and dilute it to 100 mL. Adjust it to about pH2 with ammonia water (3.4).

3.7 Iron standard solution: Weigh 0.1500 g of metallic iron (mass fraction of iron $\geq$

99.9%). Place it in a 250 mL beaker. Add 20 mL of nitric acid (1 + 1). Heat to completely dissolve. Boil to drive out nitrogen oxides. Remove it. Cool to room temperature.

Transfer to a 1000 mL volumetric flask. Use water to make the volume reach to the mark. 1 mL of this solution contains 0.15 mg of iron.

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