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

YS/T 325.1-2009

Methods for chemical analysis of nickel-copper alloy. Part 1: Determination of nickel content. The Na2EDTA titrimetric method

镍铜合金化学分析方法 第1部分：镍量的测定 Na2EDTA滴定法

(English Translation)

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Foreword

YS/T 325-2009 "nickel-copper alloy chemical analysis method" a total of six sections.

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--- Part 2. Determination of copper content - Gravimetric method electrolysis

--- Part 3. Determination of iron content by flame atomic absorption spectrometry

--- Part 4. Determination of manganese content by flame atomic absorption spectrometry

--- Part 5. Determination of aluminum content Na2EDTA titration

--- Part 6. Determination of the amount of titanium di Zhao DAM spectrophotometry this section YS/T Part 1 325.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

This section is responsible for drafting unit. aluminum Shenyang Nonferrous Metals Processing Co., Ltd.

This section is drafted. Guangzhou Nonferrous Metal Research Institute.

1 Scope

YS/T of the provisions of section 325 of the determination of nickel content of nickel-copper alloy.

This section applies to the determination of nickel content of nickel-copper alloy. Measurement range. 30.00% - 85.00%.

2 Principle of the method

The sample is dissolved in nitric acid, in addition to copper electrolysis. In acetate solution with sodium thiosulfate and sodium tartrate masking residual copper and iron, aluminum, lead and other interfering elements, dimethylglyoxime precipitate nickel. The precipitate was

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dissolved in nitric acid, the evaporation destroy Diacetyldioxime. With an excess of disodium edetate (Na2EDTA) standard solution of nickel complex, at pH5 ~ pH6 titration with lead nitrate standard solution titrate excess Na2EDTA.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.

3.1
urea.

3.2
Ammonia (rho0.90g/mL).

3.3
nitric acid (1 + 1).

3.4
nitric acid (1 + 100).

Hydrochloride 3.5 (1 + 120).

3.6
acetic acid (1 + 2).

Ammonia 3.7 (1 + 1).

3.8
sodium tartrate (C4H4O6Na2 · 5H2O) solution (100g/L).

3.9
ammonium acetate solution (200g/L).

3.10
sodium thiosulfate (Na2S2O3 · 5H2O) solution (100g/L).

3.11
ammonium solution of hexamethylenetetramine (100g/L).

3.12
dimethylglyoxime in ethanol (10g/L). Weigh 10g Diacetyldioxime dissolved in ethanol, diluted to 1000mL.

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3.13

Nickel standard solution. Weigh 1.0000g pure nickel (Ni mass fraction >=99.95%) placed in 250mL beaker, add 20mL nitrate Acid (3.3), dissolved by heating, boiled to remove oxides of nitrogen, cooled moved 1000mL volumetric flask, dilute with water to volume, and mix. This solution 1mL solution containing 0.001g of nickel (rho).

3.14

lead nitrate [Pb (NO3) 2] Standard Solution Ba {[Pb (NO3) 2] = 0.0100mol/L}.

3.14.1 Formulated

Weigh 3.312g of lead nitrate into 300mL beaker, adding a small amount of water to dissolve and transferred to 1000mL volumetric flask, dilute to Volume, and mix.

3.14.2 Calibration

Pipette 10.00mL (Vp 1) Disodium ethylenediaminetetraacetate (by Na2EDTA) standard solution (3.15) in the 300mL beaker, add 10mL Hexamethylenetetramine ammonium solution (3.11), 50mL water, drops 4 to 5 drops of xylenol orange solution (3.16) with acetic acid (3.6) and to the solution from purple Turns yellow, standard titration with lead nitrate solution (3.14) to the titration from yellow to red is just the end of the volume, record consumption (V0).

According to equation (1) calculate the standard titration lead nitrate solution (3.14) equivalent Na2EDTA standard solution (3.15) milliliters.

K = 1 Vp V0

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