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YS

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

YS/T 568.11-2008

Replacing YS/T 568.11-2006

**Chemical analysis methods for zirconium oxide and hafnium
oxide. Determination of nickel content. α -Furil dioxime
spectrophotometric method**

氧化锆、氧化铪化学分析方法 镍含量的测定 α -联吡喃甲酰二肟分光光度法

(English Translation)

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Foreword

YS/T 568 "zirconium, hafnium oxide chemical analysis method" is divided into 11 parts.

--- Part 1. Determination of zirconium and hafnium oxide combined amount of mandelic acid gravimetric method;

--- Part 2. Determination of iron content sulfonic acid spectrophotometry;

--- Part 3. Determination of the amount of silicon molybdenum blue spectrophotometric method;

--- Part 4. Determination of aluminum content of chromium azure S- cypyrindinium chloride spectrophotometry;

--- Part 5. Determination of sodium content by flame atomic absorption spectrometry;

--- Part 6. Determination of the amount of titanium di Zhao DAM spectrophotometry;

--- Part 7. Determination of phosphorus content of antimony salt - ascorbic acid - phosphorus molybdenum blue spectrophotometric method;

--- Part 8. zirconia aluminum, calcium, magnesium, manganese, sodium, nickel, iron, titanium, zinc, molybdenum, vanadium, hafnium content - Inductively coupled plasma atomic Emission spectrometry;

--- Part 9. hafnium oxide of aluminum, calcium, magnesium, manganese, sodium, nickel, iron, titanium, zinc, molybdenum, vanadium, zirconium content - Inductively coupled plasma atomic Emission spectrometry;

--- Part 10. Determination of manganese content - Potassium periodate spectrophotometric method;

--- Part 11. Determination of alpha- linked furoylhydrazone nickel dioxime

spectrophotometric method.

This is Part 11.

The partial replacement of YS/T 568.11-2006 "zirconium oxide, hafnium nickel content determination" (formerly GB/T 2590.11-1981).

This portion of YS/T 568.11-2006 compared to the main changes are as follows.

--- Added "7.1 repeatability" clause;

--- Added "8 Quality assurance and control" clause.

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

This part by the Beijing Nonferrous Metal Research Institute, China Nonferrous Metals Industry Institute of Standards Metrology and Quality is responsible for drafting.

1 Scope

This section specifies the determination method zirconia and hafnium nickel content.

This section applies to the determination of zirconium oxide and hafnium oxide and nickel content. Measurement range. 0.0005% to 0.03%.

2 Method summary

Sample sulfate, ammonium sulfate was dissolved. Sodium citrate in the presence of nickel in ammonia medium associated with alpha- furoylhydrazone dioxime form a colored complex and extracted with chloroform extraction, in the spectrophotometer at a wavelength of 440nm measured absorbance.

3 Reagents

3.1

ammonium sulfate.

3.2

sulfate (rho1.84g/mL), pure class distinctions.

3.3

chloroform.

Ammonia 3.4 (1 + 1).

3.5

sodium citrate solution (300g/L).

3.6

hydroxylamine hydrochloride solution (100g/L).

3.7

alpha- linked furoyl dioxime solution (10g/L). Weigh 1g alpha- associated furoyl dioxime dissolved in 50mL of ethanol, diluted with water to 100mL, and mix.

3.8

phenolphthalein solution (10g/L). Weigh 1g phenolphthalein dissolved in 50mL of ethanol, diluted with water to 100mL, and mix.

3.9

Nickel standard stock solution.

Nickel weighed 1.0000g ((Ni) > 99.9%), placed in a beaker of 300mL, 15mL of nitric acid was added (rho 1.42g/mL), it was heated on a water bath until completely dissolved after, on a hot plate heated to boiling. Cooling water moved into 1000mL volumetric flask, and dilute to the mark, Shake well. 1mL solution containing 1mg nickel.

3.10

Nickel standard solution. Pipette 25.00mL solution (3.9), placed in 250mL flask, diluted with water to the mark. This solution 1mL containing 100µg nickel.

3.11

Nickel standard solution. Pipette 25.00mL solution (3.10), placed in 250mL flask, diluted with water to the mark. This solution Liquid 1mL containing 10µg nickel.

4 Instrument

Spectrophotometer.

5.1 Sample

Weigh 0.10g sample (1), accurate to 0.0001g.

5.2 Determination of the number of Independent of the two measurements, the mean value.