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YS

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

YS/T 568.6-2008

Replacing YS/T 568.6-2006

**Chemical analysis methods for zirconium oxide and hafnium
oxide. Determination of titanium content. Diantipyrylmethane
spectrophotometric method**

氧化锆、氧化铪化学分析方法 钛量的测定 二安替吡啉甲烷分光光度法
(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- cetylpyridinium 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.

Part is divided into 6 sections.

The partial replacement of YS/T 568.6-2006 "zirconium oxide, hafnium titanium content determination" (formerly GB/T 2590.6-1981).

This portion of YS/T 568.6-2006 compared to the main changes are as follows.

--- Curve by the scope of 0 ~ 2.4µg/mL was adjusted to 0 ~ 3.0µg/mL;

--- 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.

This part by the Guangzhou Research Institute of Nonferrous Metals, Beijing Nonferrous Metal Research Institute drafted.

1 Scope

This section specifies the determination method zirconium oxide, hafnium titanium content.

This section applies to zirconium oxide, hafnium oxide - Determination of titanium content. Measurement range. 0.005% to 2.5%.

2 Method summary

Samples with sulfuric acid, ammonium sulfate is dissolved (or decomposition with hydrofluoric acid and nitric, hydrofluoric acid, sulfuric acid smoke rush), oxalic acid masking body zirconium, Hafnium, in order to eliminate the interference of ascorbic acid iron. In sulfuric acid medium, with two titanium antipyril DAM forms a yellow complex wave spectrophotometer Measuring the absorbance at 430nm long.

3 Reagents

3.1

ammonium sulfate.

3.2

hydrochloride (rho1.19g/mL).

3.3

sulfate (rho1.84g/mL).

3.4

Hydrofluoric acid (rho1.13g/mL).

Nitrate 3.5 (rho1.42g/mL).

3.6

two antipyrine DAM solution (50g/L). Weigh 20g two antipyrine DAM, placed in 500mL beaker, add salt 400mL Acid (1 + 24), heating and stirring until completely dissolved, cooled, filtered into a brown bottle.

3.7

oxalic acid solution (100g/L).

3.8

ascorbic acid solution (10g/L). the time is now equipped with.

3.9

sulfate (1 + 1).

After Weigh 1.0000g titanium [(Ti) >=99.9%], placed in 250mL platinum dish, add a little water. 3.10 Titanium standard stock solution Slowly dropping hydrofluoric acid (3.4) to dissolve, then dropping nitric acid (3.5) will be completely oxidized low-cost titanium added 10mL sulfuric acid (3.3), shake Evaporated on a hotplate until white smoke, remove, cool. Water moved into 1000mL volumetric flask, dilute to the mark with sulfuric acid (1 + 19). This solution 1mL containing 1.00mg titanium.

3.11

Titanium standard solution. Pipette 25mL titanium standard stock solution (3.10), placed in 250mL flask, add 15mL sulfuric acid (3.9), diluted with water to the mark. This solution 1mL containing 100μg titanium.

4 Instrument

Spectrophotometer.

5.1 Sample

Table 1 sample was weighed, accurate to 0.0001g.

5.2 Determination of the number of Independently measured twice and averaged.