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YS

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

YS/T 227.11-2010

Replacing YS/T 227.11-1994

**Methods for chemical analysis of tellurium. Part 11:
Determination silicon content. N-butanol extraction
molybdenum blue spectrophotometry**

碲化学分析方法 第11部分：硅量的测定正丁醇萃取硅钼蓝分光光度法
(English Translation)

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Foreword

YS/T 227 "tellurium chemical analysis methods," a total of 12 parts.

--- Part 1. Determination of bismuth content hydride generation - atomic fluorescence spectrometry;

--- Part 2. Determination of aluminum content Chromazurol S- bromo cypyrindinium micellar solubilization spectrophotometry;

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

--- Part 4. Determination of iron content - Phenanthroline spectrophotometric method;

--- Part 5. determination of selenium content of 2,3-diaminonaphthalene spectrophotometry;

--- Part 6. Determination of copper content of solid-liquid separation - flame atomic absorption spectrometry;

--- Part 7. Determination of sulfur content by inductively coupled plasma atomic emission spectrometry;

--- Part 8. magnesium, sodium content - Flame atomic absorption spectrometry;

--- Part 9. Determination of tellurium content of potassium dichromate - ammonium ferrous sulfate volumetric method;

--- Part 10. Determination of arsenic content by hydride generation - atomic fluorescence spectrometry;

--- Part 11. Determination of silicon content of n-butanol silicon molybdenum blue spectrophotometric method;

--- Part 12. bismuth, aluminum, lead, iron, selenium, copper, magnesium, sodium, arsenic content - Inductively coupled plasma atomic emission spectrometry.

This is Part 11.

This section drafted in accordance with GB/T 1.1-2009 given rules.

The partial replacement of YS/T 227.11-1994 "determination of tellurium in the amount of silicon (n-butanol silicon molybdenum blue photometric method)." versus YS/T 227.11-1994 compared, this section has the following changes.

- Complements the precision, quality assurance and control provisions;
- Complements the "test report" requirement.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) centralized.

This section is responsible for drafting unit. Zhuzhou Smelter Group Co., Ltd.

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1 Scope

YS/T of the provisions of the section 227 determination of tellurium content of silicon.

This section applies to the determination of tellurium content of silicon. Measurement range. 0.0005% to 0.0030%.

2 Principle of the method

After the sample is dissolved by acid, at pH values of 5.5 to 6.5 in the hydrolysis separation tellurium, about 1.2 on the pH of ammonium molybdate added to form a silicon Heteropolyoxomolybdate in with 2mol/L sulfuric acid medium butanol silicon molybdenum heteropoly acid, reduced to silicon-molybdenum blue with stannous chloride, in the spectrophotometer at a wavelength of 700nm, the measured absorbance, calculate the amount of silicon using standard curve method.

3 Reagents

The reagents Unless otherwise specified, the rest are excellent pure above, an analysis of water are water. Reagents and standard solutions were formulated after Store in plastic bottle.

3.1

hydrochloride (rho1.19g/mL).

Nitrate 3.2 (rho1.43g/mL).

3.3

sulfate ($\rho=1.84\text{g/mL}$).

3.4

sulfate (12).

3.5

sulfuric acid (19) with n-butanol saturated.

3.6

sulfuric acid (1.5 98.5).

3.7

nitric acid (11).

3.8

Hydrofluoric acid. after redistilled use.

3.9

saturated solution of boric acid.

3.10

Sodium hydroxide solution (400g/L).

3.11

ethanol. AR.

3.12

n-butanol, AR.

3.13

ammonium molybdate solution (200g/L). Weigh 20g of high purity ammonium molybdate was dissolved in 80mL water, cooled, diluted with water to 100mL, mix Even after filtration use.

3.14

tin dichloride solution (100g/L). Weigh 10g tin dichloride in the beaker, add 50mL of hydrochloric acid (3.1), at room temperature to dissolve After adding water to 100mL mix. Using now.

3.15

Hydrazine sulfate solution (5g/L). Weigh 0.5g of sulfuric acid and Hydrazine sulfate dissolved in 100mL (3.6), and mix well.