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YS

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

YS/T 227.8-2010

Replacing YS/T 227.8-1994

**Methods for chemical analysis of bismuth. Part 8:
Determination of magnesium and sodium content. Flame
atomic absorption spectrometry**

铋化学分析方法 第8部分镁、钠量的测定 火焰原子吸收光谱法

(English Translation)

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Table of Contents

Foreword
1 Scope
2 Principle of the method
3 Reagents
4 Instrument

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 cypylridinium 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 section 8.

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

The partial replacement of YS/T 227.8-1994 "tellurium magnesium, sodium content was measured (atomic absorption spectrometry)." And YS/T 227.8-1994 Compared to the main part of the following changes.

--- Measurement range, Mg from 0.001% to 0.002% by the expansion of 0.0005% ~ 0.0030%, Na 0.006% from 0.003% Extended 0.0020% 0.0070%;

--- 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.

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1 Scope

YS/T of the provisions of the section 227 determination of tellurium in the amount of magnesium and sodium content.

This section applies to the determination of tellurium in the amount of magnesium and sodium content. Measuring range. Mg. 0.0005% ~ 0.0030%; Na. 0.0020% ~ 0.0070%.

2 Principle of the method

Sample with nitric acid and hydrochloric acid dissolved, strontium salt eliminate the interference of coexisting elements in dilute nitric acid and hydrochloric acid medium, using air - acetylene fire Flame atomic absorption spectrometer wavelength 285.2nm, 589.0nm measured magnesium, sodium absorbance to a standard curve method to calculate the amount of magnesium, sodium content.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as an analytical reagent and water.

Nitrate 3.1 (rho1.40g/mL), ultra-pure.

3.2

hydrochloride (rho1.19g/mL), ultra-pure.

3.3

nitric acid (11).

3.4

nitric acid (110).

3.5

hydrochloride (11).

3.6

Strontium nitrate solution (100g/L).

3.7

Magnesium standard stock solution. Weigh 0.1000g of magnesium ($\geq 99.95\%$), placed in 100mL beaker, add 20mL of nitric acid (3.4), Was heated until complete dissolution, boiling rid of nitrogen oxides, is removed, cooled and transferred to 1000mL volumetric flask, dilute to the mark with water and mix.

This solution 1mL containing 100 μ g magnesium.

3.8

Sodium standard stock solution. Weigh 0.2545g pre-drying at 120 °C reference reagent sodium chloride, placed 100mL beaker, add A small amount of water dissolved and transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution 1mL containing 100 μ g sodium.

3.9

Magnesium standard solution. Pipette 10.00mL magnesium standard stock solution (3.7) in 200mL volumetric flask, dilute with water to volume, and mix.

This solution 1mL containing 5 μ g magnesium.

3.10

Sodium standard solution. Pipette 12.00mL sodium standard stock solution (3.8) in 100mL volumetric flask, dilute with water to volume, and mix.

This solution 1mL containing 12 μ g sodium.

4 Instrument

Atomic absorption spectrometer, with magnesium, sodium hollow cathode lamp.