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YS

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

YS/T 227.10-2010

Replacing YS/T 227.10-1994

**Methods for chemical analysis of tellurium. Part 10:
Determination of arsenic content. Hydride generation-atomic
fluorescence spectrometry**

碲化学分析方法 第10部分：砷量的测定氢化物发生-原子荧光光谱法
(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 absorptiometry;

--- 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 10.

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

The partial replacement of YS/T 227.10-1994 "determination of tellurium in the amount of arsenic (n-amyl alcohol extracted arsenic molybdenum blue photometric method)." versus YS/T 227.10-1994 compared, this section has the following changes.

--- Changed the measurement method using hydride generation - atomic fluorescence spectrometry;

--- 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.

Participated in the drafting of this section. Beijing Mining Research Institute, Liaoning Entry Inspection and Quarantine Bureau.

1 Scope

YS/T 227 provisions of this part of the determination of tellurium arsenic content.

This section applies to the determination of tellurium arsenic content. Measurement range. 0.0002% to 0.0010%.

2 Principle of the method

Conditions of use at a pH of 5.5 to 6.5, hydrolysis tellurium precipitated remove the bulk of the matrix, in hydrochloric acid medium, using a hydride - Original Sub fluorescence spectrometer determination of arsenic content.

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

high-purity tellurium (mass fraction $\geq 99.999\%$).

3.2

nitrate ($\rho 1.42\text{g/mL}$), pure class distinctions.

3.3

hydrochloric acid ($\rho 1.19\text{g/mL}$), pure class distinctions.

3.4

nitric acid (11).

3.5

hydrochloride (11).

3.6

hydrochloride (19).

3.7

hydrochloric acid (595).

3.8

potassium hydroxide solution (200g/L). Weigh 40g of potassium hydroxide dissolved in 200mL of water stored in a plastic bottle, using now.

3.9

solution of potassium borohydride (20g/L). Weigh 10g of potassium borohydride were dissolved in 500mL of potassium hydroxide solution (5g/L), and now with the existing.

3.10

thiourea - ascorbic acid solution. Weigh thiourea in 300mL beaker, each 25g of ascorbic acid dissolved in water, the volume to 500mL volumetric flask, using now.

3.11

Storage arsenic standard solution. Accurately weigh 0.1320g trioxide ($\geq 99.95\%$, pre-drying in a sulfuric acid desiccator to 24h A) in the 300mL beaker, add 20mL of potassium hydroxide solution (3.8), completely dissolved by heating with hydrochloric acid (3.3) and to slightly cold However, moved into 1000mL volumetric flask, dilute to volume, and mix. This solution 1mL containing 0.1mg arsenic.

3.12

arsenic standard solution. Pipette 5.00mL accurately arsenic standard stock solution (3.11) in 500mL volumetric flask, was added 75mL of hydrochloric acid (3.3), dilute to the mark and mix. This solution 1mL containing 1 μ g of arsenic.

3.13

bromocresol purple - bromothymol blue mixed indicator. Weigh 0.01g bromocresol purple and bromothymol blue dissolved in 100mL Water.