

ICS 77.120.99
CCS H 13

YS

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

YS/T 227.2-2010

Replacing YS/T 227.2-1994

**Methods for chemical analysis of tellurium. Part 2:
Determination of aluminium content. Chromazurol S-Tetradecyl
bromide pyridine micellar solubilization spectrophotometry**

碲化学分析方法 第2部分：铝量的测定铬天青S-溴代十四烷基吡啶胶束增溶分光
光度法

(English Translation)

Issued on: November 22, 2010

Implemented on: March 1, 2011

Issued by: Ministry of Industry and Information Technology

Table of Contents

Foreword

1 Scope

2 Principle of the method

3 Reagents

Foreword

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

--- 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 2.

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

Tellurium Determination of aluminum content in this section instead of YS/T 227.2-1994 "(S-bromo Chromazurol cypyrindinium micellar solubilization absorptiometry law)". Compared with YS/T 227.2-1994, this section has the following changes.

--- Method name was changed to "Chromium Azure S- bromo cypyrindinium micellar solubilization spectrophotometry";

--- 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 aluminum content.

This section applies to the determination of tellurium in aluminum content. Measurement range. 0.0005% to 0.0040%.

2 Principle of the method

Samples with hydrochloric acid, nitric acid dissolved in hydrochloric acid medium, sulfite reduction tellurite to tellurium acid precipitation to remove the matrix, in acetic acid - ammonium acetate buffer Red solution, aluminum and chrome azure S forming a colored complex with bromo cypyrindinium micellar solubilization at 610nm wavelength spectrophotometer at the determination of aluminum content.

3 Reagents

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

3.1

hydrochloride (ρ 1.19g/mL), ultra-pure.

Nitrate 3.2 (ρ 1.42g/mL), ultra-pure.

3.3

Ammonia (rho0.90g/mL), ultra-pure.

3.4

glacial acetic acid.

3.5

sulfurous acid (sulfur dioxide containing not less than 6.0%).

3.6

hydrochloride (11).

3.7

hydrochloride (120).

3.8

ammonia (120).

3.9

ascorbic acid solution (100g/L).

3.10

phenanthroline solution (10g/L). Weigh 1.0g phenanthroline, placed in 200mL beaker, add 2mL of hydrochloric acid (3.6) and less the amount of water, dissolved by heating, and diluted to 100mL.

3.11

chromium azure S (CAS) solution (1g/L). Store in a brown bottle.

Bromo cypylpyridinium 3.12 (TPB) solution (4g/L). Weigh 0.8g cypylpyridinium bromo, dissolved in 200mL of warm water.

3.13

Chromium Azure S- bromo cypylpyridinium mixed solution. Chromium Azure S solution (3.11), brominated tetradecyl pyridine solution (3.12) by Mixed in equal volumes, shaken, filtered, and stored in a brown bottle, valid for one week.

3.14

acetic acid solution (4mol/L).

3.15

ammonium acetate (4mol/L).

3.16

acetic acid - ammonium acetate buffer solution. acetic acid solution (3.14), a solution of ammonium acetate (3.15) by volume (1.10) were mixed, shaken and filtered.