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YS

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

YS/T 226.13-2009

Replacing YS/T 226.3-1994; YS/T 226.6-1994; YS/T 226.8-1994; YS/T 226.13-1994

Methods for chemical analysis of selenium. Part 13: Determination of silver, aluminum, arsenic, boron, mercury, bismuth, copper, cadmium, iron, gallium, indium, magnesium, nickel, lead, silicon, antimony, tin, tellurium, titanium and zinc content. Induct

硒化学分析方法 第13部分：银、铝、砷、硼、汞、铋、铜、镉、铁、镓、铟、镁、镍、铅、硅、锑、锡、碲、钛、锌量的测定 电感耦合等离子体质谱法

(English Translation)

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Foreword

YS/T 226 "selenium chemical analysis method" is divided into 13 parts.

- Part 1. Determination of bismuth content - Hydride Generation - Atomic Fluorescence Spectrometry
- Part 2. Determination of antimony content Hydride Generation - Atomic Fluorescence Spectrometry
- Part 3. Determination of aluminum content Chromazurol S- cetylpyridinium bromide spectrophotometric method
- Part 4. Determination of mercury content of dithizone - CTC colorimetric titration
- Part 5. Determination of the amount of silicon molybdenum blue spectrophotometry
- Part 6. Determination of sulfur content symmetrical diphenyl semicarbazide spectrophotometry
- Part 7. Determination of magnesium content - Flame atomic absorption spectrometry
- Part 8. Determination of copper content - Flame atomic absorption spectrometry
- Part 9. Determination of iron content by flame atomic absorption spectrometry
- Part 10. Determination of nickel content by flame atomic absorption spectrometry
- Part 11. Determination of lead content by flame atomic absorption spectrometry
- Part 12. Determination of the amount of selenium sodium thiosulfate volumetric method
- Part 13. silver, aluminum, arsenic, boron, mercury, bismuth, copper, cadmium, iron, gallium, indium, magnesium, nickel, lead, silicon, antimony, tin, tellurium, titanium, zinc content of electricity Inductively coupled plasma mass spectrometry this section YS/T Part 13 226.

The partial replacement of YS/T 226.3-1994 "selenium Determination of tin content Phenylfluorone - bromo cetyltrimethylammonium absorptiometry" YS/T 226.6-1994

"selenium arsenic content determination of arsenic molybdenum blue spectrophotometric method", YS/T 226.8-1994 "selenium in determining the amount of boron times Methylene blue photometric method "and YS/T 226.13-1994" selenium and tellurium in determining the amount of oscillopolarographic law. " And YS/T 226.3-1994, YS/T 226.6-1994, YS/T 226.8-1994 and YS/T 226.13-1994 compared, this section there are major changes as follows.

--- Using the ICP-MS method for the determination.

--- Expand the scope of determination of elements, including silver, aluminum, arsenic, boron, mercury, bismuth, copper, cadmium, iron, gallium, indium, magnesium, nickel, lead, silicon, antimony, tin, tellurium, titanium, the amount of zinc and the like.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

This section is responsible for drafting unit. Jinchuan Group Limited.

This section is drafted. Beijing Nonferrous Metal Research Institute.

Participated in the drafting of this section. Jinchuan Group Ltd, China Aluminum Henan branch.

1 Scope

YS/T 226 This part provides selenium silver, aluminum, arsenic, boron, mercury, bismuth, copper, cadmium, iron, gallium, indium, magnesium, nickel, lead, silicon, antimony, tin, tellurium, Titanium, zinc content.

This section applies to silver, aluminum, arsenic, boron, mercury, bismuth, copper, cadmium, iron, gallium, indium, magnesium, nickel, lead, silicon, antimony, tin, tellurium, titanium, zinc contents in selenium.

Measuring range. measuring range of the elements shown in Table 1.

Table 1 element Measuring range

Element measurement range/measuring range of elements% /% Ag 0.00005 ~ 0.0010 In 0.00005 ~ 0.0010 Al 0.00005 ~ 0.0010 Mg 0.00005 ~ 0.0010 as 0.00005 ~ 0.0010 Ni 0.00005 ~ 0.0010 B 0.00010 ~ 0.0010 Pb 0.00005 ~ 0.0010 Hg 0.00005 ~ 0.0010 Si 0.00010 ~ 0.0010 Bi 0.00005 ~ 0.0010 Sb 0.00005 ~ 0.0010 Cu 0.00005 ~ 0.0010 Sn 0.00005 ~ 0.0010 Cd 0.00005 ~ 0.0010 Te 0.00005 ~ 0.0010 Fe 0.00005 ~ 0.0010 Ti 0.00005 ~ 0.0010 Ga 0.00005 ~ 0.0010 Zn 0.00005 ~ 0.0010

2 Method summary

The sample is dissolved in nitric acid in acid medium, using ICP-MS mass spectrometry direct determination. All standard method to correct measured.

3 Reagents

The standard water is deionized water, conductivity is not more than $6.67 \times 10^{-2} \mu\text{S} \cdot \text{cm}^{-1}$.

Nitrate 3.1 ($\rho 1.42 \text{g/mL}$).

3.2

hydrochloride ($\rho 1.19 \text{g/mL}$).

3.3

hydrofluoric acid, mos level.

3.4

pure water (resistance $> 18 \text{Mohm} \cdot \text{cm}$).

3.5

silver standard stock solution. Weigh 1.0000g silver [silver mass fraction $\geq 99.9\%$], placed in 300mL beaker, add 10mL nitrate Acid (3.1), low dissolved, heating to remove nitrogen oxides, remove the cooled and transferred to 1000mL volumetric flask 100mL nitric acid (3.1), dilute to the mark and mix. 1mL solution containing 1mg silver.