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

YS/T 74.2-2010

Replacing YS/T 74.2-1994

**Methods of chemical analysis of cadmium. Part 2: Determination
of antimony content. Hydride generation-atomic fluorescence
spectrometry**

镉化学分析方法 第2部分：锑量的测定氢化物发生-原子荧光光谱法
(English Translation)

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Table of Contents

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

Foreword

YS/T 74-2010 "cadmium chemical analysis method" is divided into 11 parts.

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

--- Part 2. Determination of antimony content hydride generation - atomic fluorescence spectrometry;

--- Part 3. Determination of nickel content by electrothermal atomic absorption spectrometry;

--- Part 4. Determination of lead content by flame atomic absorption spectrometry;

--- Part 5. Determination of the amount of copper diethyl dithiocarbamate spectrophotometry lead;

--- Part 6. Determination of zinc content - Flame atomic absorption spectrometry;

--- Part 7. Determination of iron content of 1,10 phenanthroline spectrophotometry;

--- Part 8. Determination of thallium content of crystal violet spectrophotometry;

--- Part 9. Determination of tin content by hydride generation - atomic fluorescence spectrometry;

--- Part 10. Determination of the amount of silver by flame atomic absorption spectrometry;

--- Part 11. Inductively coupled plasma atomic arsenic, antimony, nickel, lead, copper, zinc, iron, thallium, tin and silver content of the emitted light Spectroscopy.

This is Part 2.

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

"Spectrophotometric determination of cadmium chemical analysis of 5-Br-PADAP spectrophotometry antimony content" in this section instead of YS/T 74.2-1994, and this

part Compared to the original standard, the main changes are as follows.

- Analytical methods to hydride generation - atomic fluorescence spectrometry;
- Complements the precision, quality assurance and control provisions;
- Increase the warning prompt;
- Increasing the test report clause.

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

This section is responsible for drafting unit. MCC Huludao Nonferrous Metals Group Co., Ltd.

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1 Scope

YS/T of the provisions of section 74 of the method for the determination of cadmium antimony content.

This section applies to the determination of cadmium antimony content. Measurement range. 0.00010% to 0.0025%.

2 Principle of the method

Sample with nitric acid, tartaric acid dissolved. In the medium of hydrochloric acid, thiourea - ascorbic acid solution to the pre-reduced to trivalent antimony in the hydride generator the antimony is reduced to potassium borohydride hydride generation, with argon gas introduced into the quartz furnace atomizer, the fluorescence intensity measured on the atomic fluorescence spectrometer.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled water or equivalent purity.

3.1

potassium borohydride.

3.2

tartaric acid.

3.3

hydrochloric acid (rho1.19g/mL), pure class distinctions.

3.4

nitrate (rho1.42g/mL), pure class distinctions.

3.5

hydrochloride (11).

3.6

hydrochloride (19).

3.7

nitric acid (11).

3.8

thiourea - ascorbic acid solution. Weigh thiourea, each 25g ascorbic acid dissolved in 500mL of water. The time is now equipped with.

3.9

solution of potassium borohydride (20g/L). Weigh 10.0g potassium borohydride (3.1) was dissolved in 500mL of potassium hydroxide solution (5g/L), when Day preparation.

3.10

nitric acid - tartaric acid solution. Weigh 100g of tartaric acid was dissolved in 500mL nitric acid (3.7) in.

3.11

Antimony standard stock solution. Weigh 0.1000g metal antimony ($w_{Sb} \geq 99.99\%$) in 300mL beaker, add 30mL of nitric acid (3.7), 4g of tartaric acid (3.2), cover the dish table, dissolved by heating, low temperature steam until nearly dry, remove the coolish, adding 50mL hydrochloric acid (3.5), heat gently to dissolve salt, cook the removal of nitrogen oxides boiling, remove the cooling with hydrochloric acid (3.5) in 1000mL volumetric flask. This solution 1mL containing 0.1mg antimony.

3.12

Antimony standard solution. Pipette 2.00mL antimony standard stock solution (3.11) in 1000mL volumetric flask with hydrochloric acid (3.5) volume.

This solution 1mL containing 0.2 μ g antimony.

4 Instrument

Atomic fluorescence spectrometer, with high-intensity hollow cathode lamp antimony.
Shielding gas and a carrier gas of argon ($\geq 99.99\%$).