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

YS/T 74.6-2010

Replacing YS/T 74.6-1994

**Methods of chemical analysis of cadmium. Part 6: Determination
of zinc content. Flame atomic absorption spectrometry**

镉化学分析方法 第6部分：锌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 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.

Part is divided into 6 sections.

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

The partial replacement of YS/T 74.6-1994 "cadmium chemical analysis by flame atomic absorption spectrometry zinc amount", this part of the original standard Quasi compared to

the main changes are as follows.

- Text format has been modified;
- 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.

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1 Scope

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

This section applies to the determination of cadmium in zinc content. Measurement range. 0.0002% to 0.025%.

2 Principle of the method

Sample decomposition with nitric acid, in dilute nitric acid medium, using air - acetylene flame atomic absorption spectrometer at a wavelength of 213.9nm measured Absorbance. Cadmium absorption of the substrate with no background, obtained with a standard curve method of zinc content.

3 Reagents

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

3.1

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

3.2

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

3.3

nitric acid (11).

3.4

nitric acid (13).

3.5

hydrochloride (11).

3.6

hydrochloride (12).

3.7

Cadmium matrix solution. Weigh 50g surface-cleaning metal cadmium ($w_{Cd} \geq 99.99\%$ and $w_{Zn} \leq 0.0001\%$), to burn 500mL Cup, fractional total added 250mL ~ 300mL nitric acid (3.4) until after the violent reaction on low heat until dissolved completely. Boiling nitrogen purge Oxide, cooled and transferred to 500mL volumetric flask, dilute with water to volume, and mix. This solution 1mL containing 100mg cadmium.

3.8

standard zinc stock solution. Weigh 0.1000g zinc metal ($w_{Zn} \geq 99.99\%$) into 200mL beaker, was added 10mL of hydrochloric acid (3.5), After vigorous reaction, heated and boiled to dissolve completely, removed, cooled to room temperature, transferred to 1000mL volumetric flask, dilute to the mark with water Degree, and mix. This solution 1mL containing 100 μ g zinc.

3.9

Zinc standard solution. Pipette 50.00mL standard zinc stock solution (3.8) in 1000mL volumetric flask, was added 5mL hydrochloric acid (3.6), Diluted with water to the mark, and mix the solution 1mL containing 5 μ g zinc.

4 Instrument

Atomic absorption spectrometer, with zinc hollow cathode lamp.

Under optimum working conditions, who can reach the following indicators are, can be used.