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

YS/T 775.1-2011

**Methods for chemical analysis of lead anode slime. Part 1:
Determination of lead content. Na₂EDTA titrimetric method**

铅阳极泥化学分析方法 第1部分：铅量的测定Na₂EDTA滴定法

(English Translation)

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Foreword

YS/T 775-2011 "lead anode mud chemical analysis method" is divided into seven parts.

- Part 1. Determination of lead content - Na₂EDTA titration;

Part 2. Determination of Bismuth Flame Atomic Absorption Spectrometry and Na₂EDTA Titration;

- Part 3. Determination of arsenic content - Potassium bromate titration;

- Part 4. Determination of antimony content - Flame atomic absorption spectrometry and cerium sulphate titration;

- Part 5. Determination of gold and silver;

- Part 6. Determination of copper content - Iodometric method;

Part 7. Determination of arsenic, copper and selenium - Inductively coupled plasma atomic emission spectrometric method.

This section is part 1.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part is the national nonferrous Metals Standardization Technical Committee (SAC/TC243).

This part is responsible for drafting units. Shaanxi Dongling Smelting Co., Ltd.

This part participates in the drafting unit. Beijing Mining and Metallurgy Research Institute, China Metallurgical Huludao Nonferrous Metals Group Corporation, Zhuzhou Smelting Group Co., Ltd.

Company, Henan Yuguang Gold Lead Co., Ltd.

1 Scope

This part of YS/T 775 specifies the determination of lead in lead anodic mud.

This part is applicable to the determination of lead in lead anodic mud. The measurement range is 5.00% ~ 15.00%.

2 Method summary

Samples with nitric acid, hydrochloric acid dissolved in sulfuric acid medium, with hydrobromic acid to eliminate arsenic, antimony and tin interference, lead sulfate precipitation and coexistence Elemental separation, in pH 5.5 acetic acid - sodium acetate buffer solution, the precipitation into lead acetate, thiourea masking a small amount of copper, ascorbic acid masking A small amount of iron interference to xylenol orange as an indicator, with Na₂EDTA standard titration solution titration from purple to bright yellow as the end.

3 Reagent

Unless otherwise stated, only the reagents identified as analytical reagents and distilled or deionized water or comparable purity were used in the analysis.

3.1

ascorbic acid.

3.2

Hydrochloric acid (ρ 1.19g/mL).

3.3

nitric acid (ρ 1.42g/mL).

3.4

Sulfuric acid (ρ 1.84g/mL).

3.5

hydrobromic acid (ρ 1.38 g/mL).

3.6

Thiourea (saturated solution).

3.7

Sulfuric acid (5 95).

3.8

xylene orange solution (5g/L).

3.9

tartaric acid solution (100g/L).

3.10

acetic acid - sodium acetate buffer solution (pH5.5). Weigh 375g of anhydrous sodium acetate, add water, add 50mL glacial acetic acid, water Diluted to.2000mL, mix well.

3.11

Na₂EDTA standard titration solution (0.02 mol/L).

3.11.1

Preparation. Weigh 7.4g ethylenediamine tetraacetic acid disodium in a 300mL beaker, add water to slightly heat dissolve, cool to room temperature, move in 1000mL volumetric flask, diluted with water to the mark, mix, place after 3 days calibration.

3.11.2

Calibration. Weigh four 0.1500g metal lead (w (Pb) >=99.99%), accurate to 0.0001g, placed in 300mL beaker , Add 10mL nitric acid (3.3) heated to completely dissolved, remove the slightly cold, add 10mL sulfuric acid (3.4), heated to smoke, remove the cooling, the following is done in accordance with 5.4.2.

Calculate the amount of Na₂EDTA standard titration solution according to formula (1) Concentration.

$c = m_0 (V_1 - V_0) \cdot M \times 1000$ (1) where.

c - Na₂EDTA standard titration solution of the amount of material concentration, the unit is mol per liter (mol/L);