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YS

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

YS/T 1120.1-2016

Method for chemical analysis of gold-tin alloys--Part 1: Determination of gold content--Fire assay gravimetric method

金锡合金化学分析方法 第1部分：金量的测定 火试金重量法

(English Translation)

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Foreword

YS/T 1120 "gold and tin alloy chemical analysis method" is divided into the following three parts.

- Part 1. Determination of gold quantity - Fire test method;

- Part 2. Determination of tin content - Fluoride precipitation EDTA complexometric titration;

Part 3. Determination of iron, copper, silver, lead, palladium, cadmium and zinc - Inductively coupled plasma - atomic emission spectrometry.

This part is part 1 of YS/T 1120.

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

This part of the National Nonferrous Metals Standardization Technical Committee (SAC/TC243) proposed and centralized.

This part of the main drafting unit. your research and testing technology (Yunnan) Co., Ltd., Xi'an Ruixin Branch metal materials limited liability company, China has Color metal industry standard measurement quality Institute, your research platinum industry limited liability company.

This part participates in the drafting unit. Beijing Institute of Mining and Metallurgy, Guangzhou Nonferrous Metals Research Institute, Beijing Institute of Nonferrous Metals and Rare Earth Application, Tongling colored rare precious metals branch, Zijin Mining Group Co., Ltd.

1 Scope

This part of YS/T 1120 specifies the method for the determination of gold in gold and tin alloys.

This part is applicable to the determination of gold content in gold and tin alloy. The measurement range is 5% to 85%.

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2 Method summary

Containing more than 35% of the tin content of the sample, the ingredients, melting lead to lead to lead with precious metal gold and silver lead buckle. Blowing gold and silver with lead Buckle separation, get gold and silver tablets, the nitric acid after the silver, the weight of the determination of gold content.

Tin content of not more than 35% of the sample, adding the right amount of silver, wrapped in lead foil, 920 °C ± 10 °C for the soaked, so that lead and tin by oxygen and gold and silver separation, get gold and silver tablets. After the silver nitrate, the content of gold was determined by gravimetric method.

3 Samples and materials

Unless otherwise stated, only the reagents and first-order water, identified as analytical pure, were used in the analysis.

3.1
sodium carbonate. industrial pure, powder.

3.2
lead oxide. industrial pure, powdery.

3.3
anhydrous borax. industrial pure, powdery.

3.4
Silica. industrial pure, powdery.

3.5
flour.

3.6
glacial acetic acid (rho1.05g/mL).

3.7
nitric acid (rho1.42g/mL).

3.8
Sterling silver (mass fraction >=99.99%).

3.9
pure gold (mass fraction >=99.99%).

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3.10
lead tablets (mass fraction >= 99.99%).

3.11
lead foil (mass fraction >=99.99%). Thickness of 0.1mm, cut into a square, each weighing about 5g.

3.12
Covering agent (6 2 1). 6 parts of sodium carbonate and 2 parts of borax were mixed with 1 part of silica.

3.13
Mixing (10 1). 10 parts of lead oxide is mixed with 1 part of flour.

3.14
nitric acid (1 1).

3.15
nitric acid (2 1).

3.16
nitric acid (3 1).

3.17
nitric acid (1 3).

3.18
glacial acetic acid (1 1).

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