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

YS/T 955.1-2014

**Methods for chemical analysis of silver. Part 1: Determination of
silver content. Fire assay method**

粗银化学分析方法 第1部分：银量的测定火试金法

(English Translation)

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Foreword

YS/T 955-2014 "crude chemical analysis of silver" is divided into two parts.

--- Part 1. Determination of the amount of silver fire assay;

--- Part 2. Flame atomic absorption spectrometry palladium content.

This section YS/T Part 1 955.

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

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

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1 Scope

This method is applicable to the determination of crude silver content. Measurement range (mass fraction) of 40.00% to 99.90%.

When the sample contains platinum, palladium, ruthenium, rhodium, iridium and osmium and other platinum group elements, the method will not apply.

2 Principle of the method

The crude sample was wrapped in silver foil lead, at a high temperature molten state cupellation, lead and other metals are oxidized with gold and silver and other precious metals separation, Get together gold and silver tablets, weighing, gold after nitric acid points, minus the amount of gold and silver as measured by post along with the standard correction in a sample calculation of the mass fraction of silver.

3 Reagents and materials

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

3.1

lead foil. pure lead (mass fraction $\geq 99.99\%$) processed into a length of about 51mm, a thickness of about 0.1mm square sheet.

3.2

Silver. mass fraction $\geq 99.99\%$.

3.3

gold. the mass fraction $\geq 99.99\%$.

3.4

nitric acid ($\rho = 1.42\text{g/mL}$).

3.5

nitric acid (17).

3.6

nitric acid (11).

3.7

Glacial acetic acid ($\rho = 1.05\text{g/mL}$).

3.8

acetic acid (13).

3.9

porcelain crucible. 30mL.

3.10

MgO ash pan. with calcined magnesia powder (particle size 0.147mm) and No. 525 by 85.15 portland cement mix, adding a small amount of water, pressed Molding, dry naturally

after use. Magnesium oxide ash pan size. diameter 30mm, height 26mm, inner diameter of 30mm, the concave depth 10mm.

4 Instruments and equipment

4.1

box-type high-temperature furnace.

4.2

Balance. a sense of the amount of 0.01mg.

4.3

mill machine. small, rolled up to a thickness of 0.1mm.

5.1 Gold, silver forecasts given

5.1.1

Weigh 0.4g sample copy, accurate to 0.00001g, wrapped in aluminum foil (3.1), insert the pre-heated ash pan (3.10), and in the box High temperature furnace (4.1) ash blown within 880 °C.

5.1.2

The combination of gold and silver after blowing ash grain hand hammer tapping on both sides of the brush attachment to bottom in box-type high-temperature furnace (4.1) inside at 750 °C ~