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YS

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

YS/T 562-2009

Replacing YS/T 562-2006

**Method for chemical analysis of precious metals alloys.
Platinum-ruthenium alloys. Determination of ruthenium content.
Thiourea spectrophotometry**

贵金属合金化学分析方法铂钌合金中钌量的测定硫脲分光光度法

(English Translation)

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Foreword

Instead of the standard YS/T 562-2006 "platinum-ruthenium alloy chemical analysis method for determining the amount of ruthenium." Compared with this standard YS/T 562-2006, the main changes are as follows.

--- Standard name by the YS/T 562-2006 "platinum-ruthenium alloys - Determination of the amount of ruthenium" to "precious metal alloys stars Determination of analytical methods platinum ruthenium alloy ruthenium amount of thiourea spectrophotometry ";

--- According to GB/T 20001.4-2001 format requirements rewritten.

This standard by the National Standardization Technical Committee of non-ferrous metals and centralized.

This standard was drafted. Your research Platinum Limited.

1 Scope

This standard specifies the method for determination of platinum-ruthenium alloy ruthenium content.

This standard applies to the determination of platinum-ruthenium alloy ruthenium content. Measuring range. 5% to 10%.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

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3 PRINCIPLE OF THE METHOD

Sample was dissolved in a glass sealed tube chlorination. Hydrochloric acid - ethanol solution of ruthenium complexes with thiourea generate blue, determined by spectrophotometry.

4 Reagents and materials

Unless otherwise indicated, the reagents used in this standard and vessels shall comply with the provisions of YS/T 371's.

4.1

hydrochloride (ρ 1.19g/mL).

4.2

HCl (1 + 1).

Nitrate 4.3 (ρ 1.42g/mL).

4.4

Hydrogen peroxide (30%).

4.5

Thiourea (100g/L), the day of preparation used.

4.6

hydrochloric acid - ethanol mixed solution. one volume of hydrochloric acid (4.1) with 1 volume of absolute ethanol.

4.7

hydrochloric acid - ethanol mixed solution. one volume of hydrochloric acid (4.2) with 1 volume of absolute ethanol.

4.8

ruthenium stock standard solution. Weigh 0.1250g powder metal ruthenium (Ru mass fraction of not less than 99.99%) were placed in a hard glass tube , Add 10mL of hydrochloric acid (4.1), 2mL hydrogen peroxide, after a sealed tube put steel casing, placed in an oven and heated at $150\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ to End Totally dissolved. The solution was then transferred to the open pipe 250mL volumetric flask, add 25mL of hydrochloric acid (4.1), dilute to the mark and mix. This standard solution 1mL solution containing 0.500mg ruthenium.

4.9

Ruthenium standard solution. Pipette 50.00mL ruthenium stock standard solution in 250mL flask, add 20mL of hydrochloric acid (4.1), diluted with water Scale. Mix well. This standard solution containing 0.10mg per ml ruthenium.

4.10

platinum solution. Weigh 0.2500g platinum (platinum content not less than 99.99%) were placed in 300mL beaker, add 20mL hydrochloric acid (4.1), 8mL nitric acid (4.3), cover the surface of the pan, heated on a hot plate until completely dissolved. Cooled to room temperature, and dish washing surface Beibi. Heated on a hotplate to near dryness. Added 3mL hydrochloric acid (4.1), heated to near dryness, repeated three times. Wet salt dissolved in water, is added 10mL hydrochloric acid (4.1), and the solution was transferred to 100mL volumetric flask, dilute to the mark. Mix well. This standard solution containing 1mL 2.500mg platinum.

5 Instruments

UV-visible spectrophotometer.