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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 15072.3-2025

Replacing GB/T 15072.3-2008

Methods for chemical analysis of precious metal alloys - Part 3: Determination of platinum content

贵金属合金化学分析方法 第3部分：铂含量的测定

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Table of Contents

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document is Part 3 of GB/T 15072 "Chemical Analysis Methods for Noble Metal Alloys". GB/T 15072 has been published as follows. part.

- Part 1: Determination of Gold Content;

- Part 2: Determination of Silver Content;

- Part 3: Determination of Platinum Content;

- Part 4: Determination of Palladium Content;

- Part 6: Determination of Iridium Content;

- Part 7: Determination of Chromium and Iron Contents in Gold Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 8: Determination of Copper Content in Gold, Palladium, and Silver Alloys. Thiourea Precipitation EDTA Complexometric Back Titration;

- Part 9: Determination of Indium Content in Gold Alloys by EDTA Complexometric Back Titration;

- Part 10.Determination of Nickel Content in Gold Alloys by EDTA Complexometric Back Titration;

- Part 11.Determination of Gadolinium and Beryllium Contents in Gold Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 12.Determination of Vanadium Content in Silver Alloys by Hydrogen Peroxide

Spectrophotometry;

- Part 13.Determination of Tin, Cerium and Lanthanum Contents in Silver Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 14.Determination of Aluminum and Nickel Contents in Silver Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 15.Determination of Nickel, Zinc and Manganese Contents in Gold, Silver and Palladium Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 16.Determination of Copper and Manganese Contents in Gold Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 17.Determination of Tungsten Content in Platinum Alloys by Tungsten Trioxide Gravimetric Method;

- Part 18.Determination of Zirconium and Gallium Contents in Gold Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 19.Determination of Vanadium and Magnesium Contents in Silver Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry;

- Part 20.Determination of Rhodium Content This document replaces GB/T 15072.3-2008 "Chemical Analysis Methods for Precious Metal Alloys. Determination of Platinum Content in Gold, Platinum and Palladium Alloys (High Manganese)".

Compared with GB/T 15072.3-2008, the main technical changes in "Potassium Acid Current Titration Method" are as follows, except for structural adjustments and editorial modifications.

a) The use of sulfuric acid has been removed (see 4.12.2 and 7.3.2 in the 2008 edition);

b) The conditions for treating the test solution, such as aeration, have been changed (see 5.4, 5.5, and 8.4; 4.10, 4.12, and 7.3.2 in the 2008 edition);

c) The description of the platinum standard solution as "1 mL contains 2.3 mg platinum" is changed to "1 mL contains 1 mg platinum" (see 5.6, 4.11 of the 2008 edition);

d) The detection equipment was changed from "ordinary polarograph" to "automatic potentiometric titrator" (see 6.2, 5.1 of the 2008 edition);

e) The sample handling method has been changed, replacing "sample" with "test specimen" (see Chapter 7, Chapter 6 of the 2008 edition);

f) The requirements for "sample quantity and its accuracy" have been changed (see 8.1, 7.1 in the 2008 edition);

g) The requirement for "allowable difference" has been removed (see Chapter 9 of the 2008 edition);

h) Added "reproducibility" and "repeatability" (see 10.1 and 10.2).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Nonferrous Metals Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Nonferrous Metals (SAC/TC243).

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This document was first published in 1994 and revised for the first time in 2008; this is the second revision.

Introduction

Precious metal alloys are alloy materials composed of one or more precious metals (such as gold, silver, platinum, palladium, etc.) and other metallic or non-metallic elements.

These alloys not only retain the excellent properties of precious metals, such as corrosion resistance, electrical conductivity, and ductility, but can also be modified by adding other metals.

Modifying or enhancing certain physical, chemical, or mechanical properties of an alloy. This makes precious metal alloys advantageous in improving material utility and reducing costs.

It is of great significance and has wide applications in the automotive industry, electronic communications, new energy, petrochemicals, weaponry, aerospace, and other fields. GB/T 15072 The aim is to establish a set of standardized methods for chemical composition analysis to meet the needs of the production and trade of precious metal alloy products. GB/T 15072 is proposed. It consists of 20 parts.

- Part 1: Determination of Gold Content. The aim is to establish potentiometric titration and fire assay methods for determining the gold content in precious metal alloys. Methods of measurement.

- Part 2: Determination of Silver Content. The aim is to establish potentiometric titration and fire assay methods for determining the silver content in precious metal alloys. Methods of measurement.

- Part 3: Determination of Platinum Content. The aim is to establish a potentiometric titration method for determining the platinum content in noble metal alloys.

- Part 4: Determination of Palladium Content. The aim is to establish gravimetric and titration methods for determining palladium content in noble metal alloys.

- Part 6: Determination of Iridium Content. The aim is to establish a potentiometric titration method for determining the iridium content in noble metal alloys.

- Part 7: Platinum, Palladium, Rhodium, Iridium, Ruthenium, Cobalt, Chromium, Iron, Nickel, Zinc, Copper, Manganese, Gadolinium, Yttrium, Tin, Cerium, Lanthanum, Aluminum, Vanadium, Magnesium, Gallium, Beryllium, Antimony Determination of zirconium, molybdenum, and titanium content. The aim is to establish an inductively coupled plasma atomic emission spectrometry (ICP-AES) method for determining the content of zirconium, molybdenum, and titanium in noble metal alloys.

Methods for determining elemental content.

- Part 8: Determination of Copper Content. The aim is to establish a titration method for determining the copper content in noble metal alloys.

- Part 9: Determination of Indium and Zirconium Content. The aim is to establish a titration method for determining the indium and zirconium content in noble metal alloys.

- Part 10.Determination of Nickel Content. The aim is to establish methods for determining the nickel content in noble metal alloys using titration and gravimetric methods.

- Part 12.Determination of Vanadium, Rhenium, Gadolinium, and Yttrium Content by Spectrophotometry. The aim is to establish a spectrophotometric method for the determination of precious metal content.

Methods for determining the content of vanadium, rhenium, gadolinium, and yttrium in gold.

- Part 17.Determination of Tungsten Content. The aim is to establish a gravimetric method