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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 7739.10-2025

Replacing GB/T 7739.10-2007

**Methods for chemical analysis of gold concentrates - Part 10:
Determination of antimony content**

金精矿化学分析方法 第10部分：锑量的测定

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 10 of GB/T 7739 "Methods for chemical analysis of gold concentrates". GB/T 7739 has been published in the following 13 parts.

- Part 1: Determination of gold and silver content;

- Part 2: Determination of silver content - Flame atomic absorption spectrometry;
- Part 3: Determination of arsenic content;
- Part 4: Determination of copper content;
- Part 5: Determination of lead content;
- Part 6: Determination of zinc content;
- Part 7: Determination of iron content;
- Part 8: Determination of sulfur content;
- Part 9: Determination of carbon content;
- Part 10: Determination of antimony content;
- Part 12: Determination of arsenic, mercury, cadmium, lead and bismuth content - Atomic fluorescence spectrometry;
- Part 13: Determination of lead, zinc, bismuth, cadmium, chromium, arsenic and mercury content - Inductively coupled plasma atomic emission spectrometry;
- Part 14: Determination of thallium content - Inductively coupled plasma atomic emission spectrometry and inductively coupled plasma mass spectrometry.

This document replaces GB/T 7739.10-2007 "Chemical analysis methods of gold concentrates Part 10: Determination of antimony content" and GB/T 7739.10- Compared with 2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The measurement range has been changed (see Chapter 1, Chapter 1 of the 2007 edition);
- b) Changed the determination method from "Hydride Generation-Atomic Fluorescence Spectrometry" to "Flame Atomic Absorption Spectrometry" (see Chapter 4, 2007 Chapter 3 of the 2011 edition);
- c) The sample mass has been changed (see 5.4.2, 2.4.1 of the 2007 edition);
- d) Added the method for eliminating interfering elements (see 5.5.3.1);
- e) The area of filter paper added has been changed (see 5.5.3.2, 2.4.3.1 of the 2007 edition);
- f) The acid addition method and acid concentration have been changed (see 5.5.3.3, 2.4.3.2 of the 2007 edition);
- g) The "allowable difference" requirement has been deleted (see 2.6 of the 2007 edition);
- h) Added "repeatability" and "reproducibility" requirements (see 5.7).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Gold Standardization Technical Committee (SAC/TC379).

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The previous versions of this document and the documents it replaces are as follows.

- GB/T 7739.10-2007;
- This is the first revision.

Introduction

After the ore is processed by the separation operation, its main components have been enriched in the concentrate, and the secondary components or other associated metals of the concentrate are also GB/T 7739 "Chemical Analysis Methods of Gold Concentrates" is designed to help gold mining companies accurately understand the main components and impurities of gold concentrates.

content, which is beneficial to optimize the control parameters of the smelting process, accurately control the consumption of reagents, reduce the interference of impurity elements on the smelting and purification process, and improve the The comprehensive recovery rate of valuable elements can contribute to the efficient recycling of resources, sustainable green and healthy development, and smart mines in the entire gold industry.

GB/T 7739 is planned to consist of 14 parts.

- Part 1: Determination of gold and silver content. The purpose is to specify the fire assay

gravimetric method, activity Carbon enrichment-flame atomic absorption spectrometry and activated carbon enrichment-iodine titration and the applicable measurement range of each method.

- Part 2: Determination of silver content flame atomic absorption spectrometry. The purpose is to specify the flame atomic absorption spectrometry method for the determination of silver content in gold concentrates.

Absorption spectroscopy and applicable measurement range.

- Part 3: Determination of arsenic content. The purpose is to specify the method for determining the amount of arsenic in gold concentrate using silver diethyldithiocarbamate spectrophotometer.

The titration method and potassium dichromate titration method and the applicable determination range of each method.

- Part 4: Determination of copper content. The purpose is to specify the flame atomic absorption spectrometry and thiosulfate method for the determination of copper content in gold concentrates Sodium iodine titration method and the applicable measurement range of each method.

- Part 5: Determination of lead content. The purpose is to specify the atomic absorption spectrometry and ethylenediaminetetraacetic acid method for the determination of lead content in gold concentrates Disodium titration method and the applicable determination range of each method.

- Part 6: Determination of zinc content. The purpose is to specify the atomic absorption spectrometric method and ethylenediaminetetraacetic acid method for the determination of zinc content in gold concentrates Disodium titration method and the applicable determination range of each method.

- Part 7: Determination of iron content. The purpose is to specify the potassium dichromate titration method for the determination of iron content in gold concentrate and the applicable determination method. scope.

- Part 8: Determination of sulfur content. The purpose is to specify the barium sulfate gravimetric method and combustion-acid-base titration method for the determination of sulfur content in gold concentrates and the applicable measurement range of each method.

- Part 9: Determination of carbon content. The purpose is to specify the non-aqueous titration method and high-frequency combustion infrared absorption method for the determination of carbon content in gold concentrates Method and applicable measurement range.

- Part 10. Determination of antimony content. The purpose is to specify the flame atomic absorption spectrometry and cerium sulfate drop method for the determination of antimony