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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 20899.9-2025

Replacing GB/T 20899.9-2007

Methods for chemical analysis of gold ores - Part 9: Determination of carbon content

金矿石化学分析方法 第9部分：碳量的测定

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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 9 of GB/T 20899 "Methods for chemical analysis of gold ores". GB/T 20899 has published the following 14 parts. part.

- Part 1: Determination of gold 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.

- Part 15.Determination of the content of copper, lead, zinc, silver, iron, manganese, nickel, cobalt, aluminium, chromium, cadmium, antimony, bismuth, arsenic, mercury, selenium, barium and beryllium Combined plasma mass spectrometry.

This document replaces GB/T 20899.9-2007 "Chemical analysis methods of gold ores Part 9: Determination of carbon content" and GB/T 20899.9- Compared with 2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Added the introduction and elimination methods of interference in non-aqueous titration method (see 4.5.3.1);

b) Added high-frequency combustion infrared absorption method (see Chapter 5).

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 20899.9-2007;

- This is the first revision.

Introduction

GB/T 20899 "Methods for Chemical Analysis of Gold Ores" aims to help gold mining companies accurately understand the valuable elements and impurity content of gold ores.

It 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 efficiency of various The comprehensive recovery rate of valence elements can contribute to the efficient recycling of resources, sustainable green and healthy development, and the construction of smart mines in the entire gold industry.

GB/T 20899 is planned to consist of 14 parts.

- Part 1: Determination of gold content. The purpose is to specify the fire assay gravimetric method, fire assay enrichment-flame Atomic absorption spectrometry, activated carbon enrichment-flame atomic absorption spectrometry, activated carbon enrichment-iodine titration and the determination of the applicable methods scope.

- 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 ores Absorption spectroscopy and applicable measurement range.

- Part 3: Determination of arsenic content. The purpose is to specify the diethyldithiocarbamate silver spectrophotometric method for the determination of arsenic content in gold ores.

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 ores Sodium titration method and the applicable measurement range of each method.

- Part 5: Determination of lead content. The purpose is to specify the flame atomic absorption spectrometry and ethylenediaminetetramine method for the determination of lead content in gold ores.

Disodium acetate titration method and the applicable determination range of each method.

- Part 6: Determination of zinc content. The purpose is to specify the flame atomic absorption spectrometric method for the determination of zinc content in gold ores and the applicable measurement methods. Set a range.

- Part 7: Determination of iron content. The purpose is to specify the potassium dichromate titration method for the determination of iron content in gold ore 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 ores 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 ores 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 content in gold ores The determination method and the applicable measurement range of each method.

- Part 12.Determination of arsenic, mercury, cadmium, lead and bismuth content by atomic fluorescence spectrometry.

Determination of lead and bismuth by hydride generation-atomic fluorescence spectrometry and its applicable determination range.

- Part 13.Determination of lead, zinc, bismuth, cadmium, chromium, arsenic and mercury content - Inductively coupled plasma atomic emission spectrometry.

Inductively coupled plasma atomic emission spectrometry for the determination of lead, zinc, bismuth, cadmium, chromium, arsenic and mercury in specified gold ores and its application measurement range.

- Part 14.Determination of thallium content - Inductively coupled plasma atomic emission spectrometry and inductively coupled plasma mass spectrometry.

The purpose is to determine the amount of thallium in gold ores by inductively coupled