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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 11066.12-2024

Methods for chemical analysis of gold - Part 12: Determination of silver, copper, iron, lead, bismuth, antimony, magnesium, nickel, manganese, palladium, chromium, platinum, rhodium, titanium, zinc, arsenic, tin, silicon, cobalt, calcium, potassium, lithium, sodium, tellurium, vanadium, zirconium, cadmium, molybdenum, rhenium, aluminum contents - Inductively coupled plasma atomic emission spectrometry

金化学分析方法 第12部分：银、铜、铁、铅、铋、锑、镁、镍、锰、钯、铬、铂、铑、钛、锌、砷、锡、硅、钴、钙、钾、锂、钠、碲、钒、锆、镉、钼、铼、铝含量的测定 电感耦合等离子体原子发射光谱法

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Standardization Administration of China

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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 12 of GB/T 11066 "Chemical analysis methods for gold": GB/T 11066 has been published in the following parts:

--- Determination of gold content by fire assay;

--- Determination of silver content by flame atomic absorption spectrometry;

--- Determination of iron content by flame atomic absorption spectrometry;

--- Determination of copper, lead and bismuth content by flame atomic absorption spectrometry;

--- Determination of silver, copper, iron, lead, antimony and bismuth by atomic emission spectrometry;

--- Determination of magnesium, nickel, manganese and palladium content by flame atomic absorption spectrometry;

--- Determination of the amount of silver, copper, iron, lead, antimony, bismuth, palladium, magnesium, tin, nickel, manganese and chromium by spark atomic emission spectrometry;

--- Determination of silver, copper, iron, lead, antimony, bismuth, palladium, magnesium, nickel, manganese and chromium by ethyl acetate extraction - inductively coupled plasma

atomic emission Spectroscopy;

--- Determination of arsenic and tin content by hydride generation-atomic fluorescence spectrometry;

--- Determination of silicon content by molybdenum blue spectrophotometry;

--- Part 11: Determination of magnesium, chromium, manganese, iron, nickel, copper, palladium, silver, tin, antimony, lead and bismuth content by inductively coupled plasma mass spectrometry Spectrum;

--- Part 12: Silver, copper, iron, lead, bismuth, antimony, magnesium, nickel, manganese, palladium, chromium, platinum, rhodium, titanium, zinc, arsenic, tin, silicon, cobalt, calcium, potassium, lithium, sodium, Determination of tellurium, vanadium, zirconium, cadmium, molybdenum, rhenium and aluminum contents - Inductively coupled plasma atomic emission spectrometry: 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 by China Nonferrous Metals Industry Association: This document is under the jurisdiction of the National Technical Committee on Standardization of Nonferrous Metals (SAC/TC243): This document was drafted by: Zijin Mining Group Co:, Ltd:, Fujian Zijin Mining and Metallurgical Testing Technology Co:, Ltd: Xiamen Branch, North Mining Testing Technology Co:, Ltd:, Daye Nonferrous Design and Research Institute Co:, Ltd:, Shenzhen Zhongjin Lingnan Nonferrous Metals Co:, Ltd:, Nonferrous Metal Technology and Economic Research Institute Co:, Ltd:, Shandong Hengbang Smelting Co:, Ltd:, Huajin National Inspection (Shenzhen) Gold and Silver Jewelry Inspection Center Co:, Ltd:, Zijin Copper Co:, Ltd:, Northeastern University, Zhejiang Suichang Huijin Nonferrous Metals Co:, Ltd: The main drafters of this document are: Chen Zhuhai, Zhang Yuan, Li Chenxi, Wang Lingling, Luo Ronggen, Long Xiujia, Ren Chenyang, Chen Lan, Yang Jianbing, Xu Menglin, Wang Wei, Liu Fangmei, Xia Xiujuan, Du Hao, Zeng Jing, Zuo Hongyi, Xie Feng, Fu Xiaoqin, Che Xiaoting, Zhong Minhui, Cao Haizhou:

GB/T 11066 "Chemical Analysis Methods for Gold" has been published in 11 parts, covering silver, iron, copper, lead, bismuth, antimony, magnesium, nickel, palladium, manganese, chromium, arsenic, However, as gold refineries, raw material suppliers, consumers, third-party arbitration institutions and intermediary traders have been Gold quality control is becoming increasingly strict, and the types of impurity elements required to be tested for gold ingots are increasing, and the testing time requirements are becoming higher and higher; therefore, efficient and accurate It is particularly important to accurately detect the chemical composition of gold: GB/T 11066 consists of 12 parts according to different test objects and test methods: constitute:

1 Scope

GB/T 11066.12-2024 is the Chinese national standard on methods for chemical analysis of gold - part 12: determination of silver, copper, iron, lead, bismuth, antimony, magnesium, nickel, manganese, palladium, chromium, platinum, rhodium, titanium, zinc, arsenic, tin, silicon, cobalt, calcium, potassium, lithium, sodium, tellurium, vanadium, zirconium, cadmium, molybdenum, rhenium, aluminum contents - inductively coupled plasma atomic emission spectrometry, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2024. Classification: ICS 77.040.30, CCS H15. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the silver, copper, iron, lead, bismuth, antimony, magnesium, nickel, manganese, palladium, chromium, platinum, rhodium, titanium, zinc, arsenic, tin, silicon, cobalt, calcium, potassium, lithium, Methods for determination of sodium, tellurium, vanadium, zirconium, cadmium, molybdenum, rhenium and aluminium contents: This document applies to silver, copper, iron, lead, bismuth, antimony, magnesium, nickel, manganese, palladium, chromium, platinum, rhodium, titanium, zinc, arsenic, tin, silicon, cobalt, calcium, potassium, lithium, Determination of the content of sodium, tellurium, vanadium, zirconium, cadmium, molybdenum, rhenium and aluminum: The determination range of each element is shown in Table 1: Table

1 Measurement range element Measurement range (mass fraction) element Measurement range (mass fraction) element Measurement range (mass fraction) Ag 0:0003~0:0500 Cr 0:0002~0:0500 K 0:0002~0:0500 Cu 0:0004~0:0500 Pt 0:0003~0:0500 Li 0:0002~0:0500 Fe 0:0003~0:0500 Rh 0:0004~0:0500 Na 0:0002~0:0500 Pb 0:0004~0:0500 Ti 0:0002~0:0500 Te 0:0003~0:0500 Bi 0:0005~0:0500 Zn 0:0003~0:0500 V 0:0002~0:0500 Sb 0:0005~0:0500 As 0:0005~0:0500 Zr 0:0002~0:0500 Mg 0:0002~0:0500 Sn 0:0005~0:0500 Cd 0:0002~0:0500 Ni 0:0003~0:0500 Si 0:0004~0:0500 Mo 0:0002~0:0500 Mn 0:0002~0:0500 Co 0:0002~0:0500 Re 0:0002~0:0500 Pd 0:0003~0:0500 Ca 0:0002~0:0500 Al 0:0002~0:0500

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document: