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

GB/T 11066.8-2009

**Method for chemical analysis of gold - Determination of silver, copper, iron, lead,
antimony, bismuth, palladium, magnesium, nickel, manganese and chromium content -
Ethyl acetate extration-inductively coupled plasma - Atomic emission spectrometry**

金化学分析方法 银、铜、铁、铅、锑、铋、钼、镁、镍、锰和铬量的测定 乙酸
乙酯萃取-电感耦合等离子体原子发射光谱法

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Foreword

GB/T 11066 "Methods for chemical analysis of gold" is divided into the following 10 sections.

--- GB/T 11066.1 gold chemical analysis method of determining the amount of gold fire assay

--- GB/T 11066.2 gold chemical analysis of silver content - Flame Atomic Absorption Spectrometry

--- GB/T 11066.3 gold chemical analysis of iron content - Flame Atomic Absorption Spectrometry

--- GB/T 11066.4 gold chemical analysis of copper, lead and bismuth contents - Flame Atomic Absorption Spectrometry

--- GB/T 11066.5 gold chemical analysis of silver, copper, iron, lead, antimony and bismuth content - Atomic Emission Spectrometry

--- GB/T 11066.6 gold chemical analysis of magnesium, nickel, manganese, and palladium contents - Flame Atomic Absorption Spectrometry

--- GB/T 11066.7 gold chemical analysis of silver, copper, iron, lead, antimony, bismuth, palladium, magnesium, tin, nickel, manganese and chromium contents - fire Flower atomic emission spectrometry

--- GB/T 11066.8 gold chemical analysis of silver, copper, iron, lead, antimony, bismuth, palladium, magnesium, nickel, manganese and chromium contents - ethyl acetate Ester extraction - inductively coupled plasma atomic emission spectrometry

--- GB/T 11066.9 gold chemical analysis method for determination of arsenic and tin hydride generation - atomic fluorescence spectrometry 11066.10 gold chemical analysis method for the determination of silicon content

--- GB/T molybdenum blue spectrophotometric method This section GB/T Part of 811,066. Appendix A of this section is an informative annex. This part is proposed by the China Nonferrous Metals Industry Association. The non-ferrous metal part by the National

Standardization Technical Committee. This section is responsible for drafting unit. Chengdu Banknote Printing Company, China Nonferrous Metals Industry Standards and Metrology Institute for Quality. Participated in the drafting of this section. Shenyang Mint, Chengdu Banknote Printing Company, Changchun Gold Research Institute, Beijing General Research Institute of Mining and Metallurgy, Shanghai Mint Plant, Tongling Nonferrous Metals Group Holdings Limited. The main drafters of this section. Wang Yu, Lai Maoming, Chen Jie, Wang Zisen, Long Shujie, wide long week, Huang Rui, Chen Feifei, in force, Liqin Mei, Chen Huiwen, Zhuxiu Fen, Huang Minhua, Zhumu Ping. Methods for chemical analysis of gold Silver, copper, iron, lead, antimony, bismuth, Determination of palladium, magnesium, nickel, manganese and chromium content Ethyl acetate - Inductively Coupled Plasma Atomic Emission Spectrometry

1 Scope

GB/T 11066.8-2009 is the Chinese national standard on method for chemical analysis of gold - determination of silver, copper, iron, lead, antimony, bismuth, palladium, magnesium, nickel, manganese and chromium content - ethyl acetate extraction-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 15 April 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2010. 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.

GB/T 11066 provisions of this part of the gold in silver, copper, iron, lead, bismuth, antimony, palladium, magnesium, nickel, manganese and chromium content determination. This section applies to (99.95% to 99.99%) in silver, copper, iron, lead, bismuth, antimony, palladium, magnesium, nickel, chromium and manganese contents - gold. Determination Fan Wai in Table 1. Table

1 Element mass fraction /% Ag 0.0003 ~ 0.0500 Cu 0.0002 ~ 0.0400 Fe 0.0005 ~ 0.0100 Pb 0.0004 ~ 0.0300 Bi 0.0003 ~ 0.0100 Sb 0.0002 ~ 0.0100 Element mass fraction /% Pd 0.0005 ~ 0.0200 Mg 0.0003 ~ 0.0100 Ni 0.0001 ~ 0.0050 Cr 0.0001 ~ 0.0050 Mn 0.0001 ~ 0.0050

2 Method summary

Sample with a mixed acid decomposition in 3mol/L HCl medium, after separation of gold extracted with ethyl acetate, the aqueous phase concentrated hydrochloric acid medium to

be made Test solution, using inductively coupled plasma atomic emission spectrometry determination of gold in silver, copper, iron, lead, bismuth, antimony, palladium, magnesium, nickel, manganese and chromium Amount.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.

3.1 hydrochloric acid ($\rho=1.19\text{g/mL}$), pure class distinctions.

3.2 nitrate ($\rho=1.42\text{g/mL}$), pure class distinctions.

3.3 nitric acid (1 + 1).

3.4 HCl (1 + 1). Hydrochloride 3.5 (1 + 3). Hydrochloride 3.6 (1 + 9). Mixed acid 3.7. 1 volume of nitric acid (3.2), 3 volumes of hydrochloric acid (3.1) and 3 volumes of water and mix well.

3.8 ethyl acetate.

3.9 tartaric acid solution (500g/L) (pre-purified). Weigh 100g of tartaric acid in 500mL beaker, a suitable amount of water to dissolve completely shift The 500mL separating funnel, add 5mL hydrochloric acid (3.5), 20mL ethyl acetate (3.8), gently shaking 20s, standing stratification. Discarded The organic phase, the aqueous phase into the original beaker, dilute with water to 200mL.