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

GB/T 15249.1-2009

Replacing GB/T 15249.1-1994

**Methods for chemical analysis of crude gold - Part 1:
Determination of gold content - Fire assay gravimetric method**

合质金化学分析方法 第1部分：金量的测定 火试金重量法

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 PRINCIPLE OF THE METHOD
- 4 Reagents and materials
- 5 Instruments and appliances

Foreword

GB/T 15249 "Crude Gold analysis method" is divided into the following five sections.

- Part 1. Determination of the amount of gold fire assay gravimetric method;
- Part 2. Determination of the amount of silver fire assay gravimetric and EDTA titration;
- Part 3. Determination of copper content iodometry;
- Part 4. Determination of lead content EDTA titration;
- Part 5. Determination of mercury content - Cold atomic absorption spectrometry. This section GB/T 15249 Part 1. This Part replaces GB/T 15249.1-1994 "the determination of gold Crude Gold analysis fire assay gravimetric method." This portion of the GB/T 15249.1-1994 compared to the main changes are as follows:
 - "1" and the increase of interfering elements "When a sample containing affecting the measurement accuracy of fire assay gravimetric method (such as iridium, palladium, platinum, Rhodium, ruthenium and osmium), this section does not apply "limited content;
 - The old version

5.6 Reagents and material terms "gold standard. the gold content of 99.95% to 99.99% of the electrolytic refining of pure flake Gold "to" gold standard. the gold content of not less than 99.98% "; the old version

7.1.5 clause analysis step" drying After a high temperature furnace at 800 °C burning 5min "changed to" burning after drying in a box high temperature furnace (5.1) at 800 °C within 3min "; remove the old version

7.2.2 clause analysis step," the average of the four standard sample measurement results as measured by the standard Gold volume sample quality "; the old version

7.3.1.1 articles analyzing step" around the ash pan in preheated 950 °C temperature furnace 20min, and then the material to be tested (7.2.1) with the standard sample (7.2.2)

in a reasonable order placed in the cupel "changed to" the ash pan Gradually warmed to about 950 °C into the box-type high-temperature furnace (5.1) preheat 20min, and then the material to be tested (7.2.1) with the standard Sample (7.2.2) in order cross into the gray dish "; the old version

7.3.4 clause analysis step," and then in a high temperature furnace in 800 °C burning 5min "Change" and then in a box high temperature furnace (5.1) at 800 °C burning within 3min ";

--- Text format has been modified; adds, "Preface", as described in GB/T 15249 "Methods for chemical analysis of crude gold" composition Partial revision of the standard and background information;

1 Scope

GB/T 15249.1-2009 is the Chinese national standard on methods for chemical analysis of crude gold - part 1: determination of gold content - fire assay gravimetric method, 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 6 May 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 October 2009. Classification: ICS 77.120.70, 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 section GB/T 15249 specifies the Crude Gold - Determination of gold content. This section applies to the determination of crude gold (gold mining, smelting and recycling crude metal products such as gold) gold content. Determination of gold content range. 30.00% to 99.90%. When a sample containing the influence of interference element fire assay gravimetric method for the measurement accuracy (such as iridium, palladium, platinum, rhodium, ruthenium and osmium), this section will not Be applicable.

2 Normative references

The following documents contain provisions which, through reference

GB/T 15249 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 17373 Crude Gold Sampling Method

3 PRINCIPLE OF THE METHOD

Weigh a certain amount of crude gold sample and quantitatively appropriate amount of silver, wrapped in lead foil performed at a high temperature molten ash blown state, lead and base metals The case is isolated and oxidized silver and gold, the gold and silver alloy particles made of an alloy by volume nitric acid points after weighing gold, along with the determination of the gold standard after correction Calculate the mass fraction of gold in a sample.

4 Reagents and materials

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

4.1 lead foil. pure lead (mass fraction of not less than 99.99%) processed into a length of about 51mm, a thickness of about 0.1mm square sheet.

4.2 Silver. Silver content of not less than 99.99%.

4.3 Standard gold. gold content of not less than 99.98%. Nitrate 4.4 ($\rho=1.42\text{g/mL}$).

4.5 nitric acid (1 + 1).

4.6 nitric acid (1 + 2).

5 Instruments and appliances

5.1 box-type high-temperature furnace.

5.2 Balance. a sense of the amount of 0.01mg.

5.3 mill machine. small, rolled up to a thickness of 0.1mm.

5.4.1 ashes dish. animal ashes made from the ashes of the best sheep. The ashes of burned animal bones crushed after size 0.175mm below Ashes powder, add 10% to 15% of the water pressing on the gray ash pan dish machine, natural drying after use. Ashes dish Dimensions. Diameter 30mm, height