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

GB/T 17418.1-2010

Replacing GB/T 17418.1-1998

**Methods for analysis of noble metals in geochemical samples -
Part 1: General rules and regulations**

地球化学样品中贵金属分析方法 第1部分：总则及一般规定

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Foreword

GB/T 17418 "analysis of noble metals in geochemical samples Method" is divided into seven parts.

- Part 1. General rules and regulations;
- Part 2. platinum and rhodium content - Determination of thiourea enrichment - catalytic polarography;
- Part 3. Determination of palladium content - Preconcentration by thiourea - Graphite furnace atomic absorption spectrophotometry;
- Part 4. Determination of the amount of iridium-enriched thiourea - Catalytic spectrophotometry;
- Part 5. Determination of the amount of ruthenium and osmium distillation - Catalytic spectrophotometry;
- Part 6. platinum, palladium and gold contents - fire assay enrichment - Emission Spectrometry;
- Part 7. Determination of nickel sulphide fire assay gold platinum group elements - Inductively Coupled Plasma Mass Spectrometry. This section GB/T 17418 Part 1. This Part replaces GB/T 17418.1-1998 "method for analysis of noble metals in geochemical samples - General rules and regulations." This section compared with the GB/T 17418.1-1998, the main changes are as follows:
 - Define the scope of this section;
 - Increase the accuracy and precision verification of content;
 - Modify the contents of the measuring instruments calibration and verification;
 - Increased pre-test instrument validation and sample preparation requirements;
 - Increasing the wet processing specimen samples burning requirements;

--- Increased use of standard requirements for safety and environmental protection. This section presents the People's Republic of China Ministry of Land Resources. This part of the National Standardization Technical Committee under the jurisdiction of Land and Resources. This section is responsible for drafting. National geology test center. This section is drafted. Zhejiang Institute of Geology and Mineral Resources, the State Research Center of Geoanalysis. The main drafters of this section. Zheng deposit Jiang Yan Maohong, Wangsu Ming. This part of the standard replaces the previous editions are.

1 Scope

GB/T 17418.1-2010 is the Chinese national standard on methods for analysis of noble metals in geochemical samples - part 1: general rules and regulations, in the field of mining and minerals. 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 10 November 2010 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 2011. Classification: ICS 73.060, CCS D46. 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 17418 provisions of this part of the precious metal analysis methods General rules and regulations in geochemical samples. This section applies to the determination of the noble metal element geochemistry and rock sample.

2 Normative references

The following documents contain provisions which, through reference

GB/T 17418 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 3100 International System of Units and Its Application

GB/T 3101 General principles relating to amounts, units and symbols

GB/T 3102 (all parts), Quantities and Units

GB/T 6379 (all parts) of measurement methods and results Accuracy (trueness and precision)

GB/T 8170 repair value expressed about the rules and limit values judgment

3 General

The methods listed

3.1 standard, can be used as an arbitration analysis used to verify other analytical methods, reference material value analysis and routine analysis.

3.2 of the same element has a plurality of standard analytical methods, can choose the most appropriate method depending on the composition and content in the sample case.

3.3 Analysis of results measured relative mass fraction of the elements expressed in units of 10^{-6} (or $\mu\text{g/g}$) or 10^{-9} (or ng/g) representation. Unit is 10^{-6} indicates, the number of significant digits take xx x, x xx, 0 xx, 0.0 xx;... Expressed in units of 10^{-9} , the effective number of bits take xx, x. x, 0. x.

3.4 Analysis of precious metal standards measured value, according to the actual level of precision instruments, containers, etc. used in the analysis by GB/T 8170 digital rounding.

3.5 participate in the analysis process of calculating the amount of various elements and compounds such as physico-chemical parameters and symbolic execution GB/T 3100, GB/T 3101 and GB/T 3102.

3.6 The precision and accuracy test according to GB/T 6379 requirements.

3.7 When using this method sample measurement, should also use similar content and matrix reference material samples and repeat accuracy and precision Density verification.

4 General Provisions

4.1 Sample size should be less than $74\mu\text{m}$. Sample amount of not less than 500g. For special uneven distribution of precious metal samples should be crushed like reduction Sub-test, using a reasonable process crushed sample to ensure uniform and representative sample.

4.2 General sample should be pre-dried at $105\text{ }^{\circ}\text{C}$ 2h, the higher sulfur content of the sample should be dried in a drying oven at $60\text{ }^{\circ}\text{C}$ blast of 2h ~ 4h, And then placed in a desiccator, cool to room temperature.

4.3 Weighing Analytical Balances used precision level should be adapted to sample weight, the balance and the weight should be within the eligibility test cycle.

a) sample weight of 1g or less, with the balance of the level of precision not less than three, the sense reached 0.1mg;

b) sample weight of 1g ~ 10g who used scales precision level not less than four, its sense

reached 1.0mg.

4.4 Since the carbon and sulfur serious impact on the precious metals wet analysis results, in addition to fire assay method, in general, need to be placed in the sample temperature in the furnace, from low

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