

ICS 73.060

CCS D46



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

GB/T 17418.6-2010

Replacing GB/T 17418.6-1998

**Methods for analysis of noble metals in geochemical samples -
Part 6: Determination of platinum, palladium and gold content -
Preconcentration by fire assay - emission spectrometry**

地球化学样品中贵金属分析方法 第6部分：铂量、钯量和金量的测定 火试金富集-
发射光谱法

Issued on: November 10, 2010

Implemented on: February 1, 2011

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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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 6. This Part replaces GB/T 17418.6-1998 "noble metals in geochemical samples analysis fire assay enrichment - emission spectroscopy measurement method Set Platinum Palladium. " This section compared with the GB/T 17418.6-1998, the main changes are as follows:
 - Increased warning;
 - Clearly indicate the mass fraction measurement range;
 - Instrument adds balance;
 - Specification standard noun;
 - The "standard sample" to "standard material";
 - Amendments and supplements the results of the calculation formula;

1 Scope

GB/T 17418.6-2010 is the Chinese national standard on methods for analysis of noble metals in geochemical samples - part 6: determination of platinum, palladium and gold content - preconcentration by fire assay - emission spectrometry, 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 geochemical samples of platinum, palladium and gold determination. This section applies to rocks containing platinum group elements platinum, palladium and gold determination, but also for stream sediment geochemical samples and other measurements set. Not for the determination of chromite ore of platinum, palladium and gold. Measurement range, mass fraction, said. Platinum 0.2ng/g ~ 100ng/g, palladium 1ng/g ~ 100ng/g, gold 0.1ng/g ~ 100ng/g.

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 17418.1 precious metal analysis methods General rules and regulations in geochemical samples Principle

3 The sample was mixed with fire assay fluxes, adding 1mg silver at 950 °C melt obtained noble metal-containing lead button. Buckle and lead slag after separation 900 °C blowing ash containing platinum, palladium, gold and silver alloy grains. Palladium-silver alloy grain loaded electrodes to emission spectrometry of platinum, palladium and gold content at the same time.

4 Reagents

- 4.1 sodium carbonate, commercially pure, powdered.
- 4.2 borax $\text{Na}_2\text{B}_4\text{O}_7 \cdot 5\text{H}_2\text{O}$, industrial pure, powdered. Acetic acid 4.3 (3664).
- 4.4 Diphenylthiourea.
- 4.5 nitrate (ρ 1.42g/mL, pure class distinctions).
- 4.6 hydrochloride (ρ 1.19g/mL).
- 4.7 antimony powder (excellent pure).
- 4.8 strontium carbonate.
- 4.9 lead oxide (industrial grade).
- 4.10 activated carbon (particle size of 0.074mm).
- 4.11 flour (flour generally commercially available).
- 4.12 graphite (spectroscopically pure, 0.074mm).
- 4.13 quartz powder (particle size of 0.074mm), after removal of the precious metal king water drying.
- 4.14 Silver (excellent pure).
- 4.15 basic lead carbonate $2\text{PbCO}_3 \cdot \text{Pb}(\text{OH})_2$, powder.