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

GB/T 14353.17-2014

**Methods for chemical analysis of copper ores, lead ores and
zinc ores-Part 17: Determination of thallium content**

铜矿石、铅矿石和锌矿石化学分析方法 第17部分：铊量测定

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Foreword

GB/T 14353 "copper ores lead ores and zinc ores chemical analysis method" is divided into 18 parts.

- Part 1. Determination of copper content;
- Part 2. Determination of lead content;
- Part 3. Determination of the amount of zinc;
- Part 4. Determination of cadmium content;
- Part 5. Determination of nickel content;
- Part 6. Determination of cobalt content;
- Part 7. Determination of arsenic content;
- Part 8. Determination of the amount of bismuth;
- Part 9. Determination of molybdenum;
- Part 10. Determination of tungsten;
- Part 11. determination of silver;
- Part 12. Determination of sulfur content;
- Part 13. the amount of gallium, indium amount, the amount of thallium, molybdenum and tungsten content Determination;

1 Scope

GB/T 14353.17-2014 is the Chinese national standard on methods for chemical analysis of copper ores, lead ores and zinc ores-part 17: determination of thallium content, 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 5 December 2014 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 April 2015. Classification: ICS 73.060, CCS D40. 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 14353 provisions of this part of the copper ore, lead ore and zinc ore Graphite Furnace Atomic Absorption Spectrometry Determination of thallium. This section applies to copper ore, graphite furnace atomic lead ores and zinc ores in the amount of thallium absorption spectrometry. Measuring range. $0.06\mu\text{g/g} \sim 40\mu\text{g/g}$ of thallium. The detection limits. thallium $0.02\mu\text{g/g}$.

2 Normative references

The following documents for the application of this document is essential, dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document. Laboratory use specifications and test methods GB/T 6682 Analysis

GB/T 14505 method for chemical analysis of rocks and ores General rules and regulations Principle

3 Sample nitric acid - hydrofluoric acid - perchloric acid - sulfuric acid decomposition, in 10% nitric acid medium, in the presence of hydrogen peroxide and iron salts, polyurethane foam Foam plastic enrichment that thallium impurity element separation, freed of thallium in a boiling water bath, ascorbic acid as matrix modifier in graphite furnace atomic absorption The photometer to thallium hollow cathode lamp as the light source, the radiation characteristics of the element thallium light, through the sample in a graphite furnace steam, the steam is thallium in The ground state atomic absorption degree by the radiation intensity weakened, calculate the amount in a sample of thallium.

4 Reagents

Unless otherwise indicated in the analysis are consistent with the use of analytical reagents and GB/T 6682 water analytical laboratory.

4.1 Hydrogen peroxide (30% H_2O_2).

4.2 nitric acid ($\rho = 1.42\text{g/mL}$).

4.3 Hydrofluoric acid ($\rho = 1.13\text{g/mL}$). Warning. toxic and highly corrosive hydrofluoric acid, the operation should wear gloves preservative to prevent skin contact.

4.4 sulfate ($\rho = 1.84\text{g/mL}$).

4.5 perchloric acid ($\rho = 1.68\text{g/mL}$). Warning. explosive materials, when used carefully!

4.6 polyurethane foam (2cm x 1cm x 0.5cm).

4.7 sulfate (11). WARNING. Improper dilution prone danger!

4.8 nitric acid (28).

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