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CCS D40



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

**GB/T 14353.12-2010**

Replacing GB/T 14353.12-1993

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**Methods for chemical analysis of copper ores, lead ores and  
zinc ores - Part 12: Determination of sulfur content**

铜矿石、铅矿石和锌矿石化学分析方法 第12部分：硫量测定

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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 and thallium amount for determination;

### 1 Scope

GB/T 14353.12-2010 is the Chinese national standard on methods for chemical analysis of copper ores, lead ores and zinc ores - part 12: determination of sulfur 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 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 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 in this section specifies the method for determination of copper ores lead ores and zinc ores in sulfur content. This section applies to copper ores, lead ores and zinc ores - Determination of sulfur content. Measurement range. barium sulfate gravimetric method > 0.1% sulfur; high temperature combustion iodometry 0.01% to 10% of sulfur; and high temperature combustion method 1% 8% of sulfur.

## 2 Normative references

The following documents contain provisions which, through reference

GB/T 14353 in this section constitute provisions of this part of the 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. 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

## 3 Barium sulfate gravimetric method

3.1 Principle Sample by sodium carbonate - zinc oxide mixed flux sintering (or sodium peroxide - sodium carbonate melt), the total sulfur is converted to sulfuric acid soluble Salt, extracted with water and filtered. In dilute hydrochloric acid medium was added barium sulfate solution so generated barium sulfate precipitation, measured by gravimetric method.

3.2 Reagents Unless otherwise stated in this section are consistent with the use of analytical reagent and GB/T 6682 analytical laboratory use in the analysis.

3.2.1 sodium peroxide.

3.2.2 sodium carbonate.

3.2.3 Sodium carbonate - zinc oxide mixed flux (12). 1 part of anhydrous sodium carbonate, 2 parts of zinc oxide, respectively, after a mortar finely, and then carefully Mix well.

3.2.4 sodium carbonate solution (10g/L).

3.2.5 hydrochloric acid (11).

3.2.6 barium chloride solution (10g/L).

3.2.7 silver nitrate solution (10g/L) (stored in a brown bottle and add a few drops of nitric acid).

3.2.8 methyl orange solution (2g/L).

3.3 instruments and equipment

3.3.1 Analytical Balance, three, a sense of the amount of 0.1mg.

### **3.4 Sample**

3.4.1 according to GB/T 14505 requirements, the processing of the sample particle size should be less than 97 $\mu$ m.