

ICS 73.060

CCS D40



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

GB/T 14353.3-2010

Replacing GB/T 14353.3-1993

**Methods for chemical analysis of copper ores, lead ores and
zinc ores - Part 3: Determination of zinc content**

铜矿石、铅矿石和锌矿石化学分析方法 第3部分：锌量测定

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 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 14353.3-2010 is the Chinese national standard on methods for chemical analysis of copper ores, lead ores and zinc ores - part 3: determination of zinc 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 provisions of this part of the copper ores lead ores and zinc ores - Determination of zinc content. This section applies to copper ores, lead ores and zinc ores - Determination of zinc content. Measurement range. Flame atomic absorption spectrophotometry 0.5% to 20% of zinc from 0.01% to 5% zinc, EDTA volumetric method.

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 Flame atomic absorption spectrophotometry

3.1 Principle Sample by aqua regia (or hydrofluoric acid, aqua regia, perchloric acid) decomposed in hydrochloric acid (595) medium (or hydrochloric acid - boric acid media), empty Air - acetylene flame. The wavelength at 213.8nm, zinc by atomic absorption spectrophotometer absorbance, calculate the amount of zinc.

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 hydrochloric acid (rho1.19g/mL).

3.2.2 nitrate (rho1.42g/mL).

3.2.3 Hydrofluoric acid (rho1.13g/mL) Warning. toxic hydrofluoric acid, is highly corrosive, the operation should wear gloves to prevent skin contact

3.2.4 perchloric acid (rho1.67g/mL) Warning. explosive materials, careful

3.2.5 aqua regia (hydrochloric acid, nitric acid = 31) freshly prepared.

3.2.6 hydrochloric acid (11).

3.2.7 hydrochloric acid (595).

3.2.8 boric acid solution (60g/L).

3.2.9 Zinc Standard Solution.

a) standard zinc stock solution [$\rho(\text{Zn}) = 1.00\text{mg/mL}$]. Weigh 1.0000g zinc metal ($\geq 99.99\%$), placed in 250mL burn Cup, cover the surface of the dish, along the beaker wall was added 10mL hydrochloric acid (3.2.6), place autolysis (such as additional acid may be enough), dissolve completely After the water wash away the surface of the dish and transferred to 1000mL volumetric flask, dilute to the mark, shake;

b) zinc standard solution [$\rho(\text{Zn}) = 20.0\mu\text{g/mL}$], dispensing 20.00mL standard zinc stock solution [3.2.9a)], put 1000mL volumetric flask, dilute to the mark, shake.

3.3 Instrument

3.3.1 atomic absorption spectrophotometer (with continuous-spectrum lamp or Zeeman effect background corrector), with zinc hollow cathode lamp.