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Zinc sulfide concentrates — Determination of silver content — Acid dissolution and flame atomic absorption spectrometric method

Concentrés sulfurés de zinc — Dosage de l'argent — Méthode par dissolution acide et spectrométrie d'absorption atomique dans la flamme

Reference number
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Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Principle ... **1**

4 Reagents ... **1**

5 Apparatus ... **2**

6 Samples ... **3**
6.1 Test sample ... 3
6.2 Test portion ... 3

7 Procedure ... **3**
7.1 Number of determinations ... 3
7.2 Blank test ... 3
7.3 Decomposition of test portion ... 3
7.4 Determination of silver ... 4

8 Expression of results ... **4**

9 Precision ... **5**
9.1 Expression of precision ... 5
9.2 Method for obtaining the final result (see Annex B) ... 5
9.3 Precision between laboratories ... 5
9.4 Check of trueness ... 6

10 Test reports ... **7**

Annex A (normative) **Procedure for the preparation and determination of the mass of a predried test portion** ... **8**

Annex B (normative) **Flowsheet of the procedure for the acceptance of analytical values for test samples** ... **10**

Annex C (informative) **Derivation of precision equations** ... **11**

Bibliography ... **15**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 183, *Copper, lead, zinc and nickel ores and concentrates*.

This second edition cancels and replaces the first edition (ISO 15247:1999), of which the warning in A.3.1 in Annex A has been revised.

This corrected version of ISO 15247:2015 incorporates the following corrections:

— in 4.4, "hydrofluoric acid" has been changed to "hydrochloric acid";

— in 9.1, in the definition of variables used in Formula (3), "s_R" has been changed to "s_L".

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Zinc sulfide concentrates — Determination of silver content — Acid dissolution and flame atomic absorption spectrometric method

1 Scope

This International Standard specifies an acid dissolution and flame atomic absorption spectrometric method for the determination of silver content of zinc sulfide concentrates.

The method is applicable to the determination of silver in zinc sulfide concentrates containing up to 60 % (*m*/*m*) zinc in the form of zinc blende and related materials.

The method is applicable to silver contents from 10 g/t to 500 g/t.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 385, *Laboratory glassware — Burettes*

ISO 648, *Laboratory glassware — Single-volume pipettes*

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*.

ISO 4787, *Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use*

ISO 9599, *Copper, lead, zinc and nickel sulfide concentrates — Determination of hygroscopic moisture content of the analysis sample — Gravimetric method*

3 Principle

Decomposition of the concentrate in hydrochloric and nitric acids. Dissolution of the digestion residue in hydrochloric acid and measurement by flame atomic absorption at 328,1 nm.

4 Reagents

During the analysis, use only reagents of recognized analytical grade and water that complies with grade 2 of ISO 3696.

4.1 Silver metal, minimum 99,99 % purity.

4.2 Nitric acid, (ρ_{20} 1,42 g/ml), chloride content < 0,5 mg/ml.

4.3 Nitric acid, (500 ml/l).

To 250 ml of water carefully add, with stirring, 250 ml of nitric acid (4.2).

4.4 Hydrochloric acid, (ρ_{20} 1,16 g/ml to 1,19 g/ml).

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