INTERNATIONAL STANDARD

ISO 12739

Second edition
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Zinc sulfide concentrates — Determination of zinc — Ion-exchange/EDTA titrimetric method

Concentrés sulfurés de zinc — Dosage du zinc — Méthode par échange d'ions et titrage à l'EDTA

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12739 was prepared by Technical Committee ISO/TC 183, *Copper, lead, zinc and nickel ores and concentrates*.

This second edition cancels and replaces the first edition (ISO 12739:1997), which has been technically revised.

Zinc sulfide concentrates — Determination of zinc — Ion-exchange/EDTA titrimetric method

WARNING — This International Standard may involve hazardous materials, operations and equipment. It is the responsibility of the user of this International Standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies an ion-exchange/EDTA titrimetric method for the determination of the mass fraction of zinc in zinc concentrates. The method is applicable to zinc sulfide concentrates having a mass fraction of zinc in the range from 11 % to 62 %.

2 Normative references

The following referenced documents are indispensable for the application of this document. 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 — One-mark 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 glassware — Methods for use and testing of capacity*

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

3 Principle

The test portion of zinc concentrate is dissolved in hydrochloric, nitric and sulfuric acids. The acidity is adjusted to about 2 mol/l with respect to hydrochloric acid. Zinc is adsorbed on a strongly basic anion-exchange resin. Some interfering ions are removed by elution with 2 mol/l dilute hydrochloric acid. Zinc is eluted with an ammonia/ammonium chloride solution. Zinc is determined in the eluate by titration with EDTA at a pH of approximately 5,6 using xylenol-orange indicator.

4 Reagents

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

4.1 Zinc, 99,99 % minimum purity, free from oxide prior to use.