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**Zinc sulfide concentrates — Determination  
of zinc content — 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.

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.

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

Annexes A to D form an integral part of this International Standard. Annexes E to G are for information only.



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

## 1 Scope

This International Standard specifies an ion-exchange titrimetric method for the determination of the zinc content of zinc concentrates. The method is applicable to zinc sulfide concentrates with zinc content in the range from 11 % (m/m) to 62 % (m/m).

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 648:1977, *Laboratory glassware — One-mark pipettes.*

ISO 1042:—<sup>1)</sup>, *Laboratory glassware — One-mark volumetric flasks.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

ISO 4787:1984, *Laboratory glassware — Volumetric glassware — Methods for use and testing of capacity.*

ISO 9599:1991, *Copper, lead and zinc sulfide concentrates — Determination of hygroscopic moisture in the analysis sample — Gravimetric method.*

ISO Guide 35:1989, *Certification of reference materials — General and statistical principles.*

## 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 hydrochloric acid solution. 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.

<sup>1)</sup> To be published. (Revision of ISO 1042:1983)