AS 4030.2—1996
ISO 11441:1995

Australian Standard®

Methods for the analysis of lead sulfide concentrates—

Part 2: Determination of lead content—Back titration of EDTA after precipitation of lead sulfate

[ISO title: Lead sulfide concentrates — Determination of lead content — Back titration of EDTA after precipitation of lead sulfate]

This Australian Standard was prepared by Committee MN/5—Copper, Lead, Zinc, Gold and Silver Ores and Concentrates. It was approved on behalf of the Council of Standards Australia on 10 May 1996 and published on 5 August 1996.

The following interests are represented on Committee MN/5:

Australasian Institute of Mining and Metallurgy

Australian Lead Development Association

CSIRO, Division of Mineral and Processing Engineering

Minerals Council of Australia

The Royal Australian Chemical Institute

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Methods for the analysis of lead sulfide concentrates—

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PREFACE

This Standard was prepared by the Standards Australia Committee MN/5 on Copper, Lead, Zinc, Gold and Silver Ores and Concentrates as part of a programme of standardizing methods for the determination of elements of commercial interest in such materials.

The objective of this Standard is to provide those involved in the analysis of lead sulfide concentrates with a standardized method of determining lead content supported by precision data obtained from an inter-laboratory test programme.

It is identical with and has been reproduced from ISO 11441:1995, which has been prepared by ISO/TC 183 Copper, Lead and Zinc Ores and Concentrates. Australia holds the Chairmanship and Secretariat of ISO/TC 183 and has made a significant contribution to the preparation of ISO 11441.

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on its cover and title page.

(b) In the source text, 'this international Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal point.

The references to international Standards should be replaced by references, where appropriate, to the following Australian or Joint Australian/New Zealand Standards:

Reference to International Standard or other publication		*Australian or Joint Australian/New Zealand Standard*	
ISO		AS	
9599	Copper, lead and zinc sulfide concentrates—Determination of hygroscopic moisture in the analysis sample—Gravimetric method	2816	Copper, lead and zinc sulfide concentrates—Determination of hygroscopic moisture in the analysis sample—Gravimetric method
385-1	Laboratory glassware—Burettes Part 1: General requirements	—	
648	Laboratory glassware—One-mark pipettes	—	
1042	Laboratory glassware—One-mark volumetric flasks	—	
4787	Laboratory glassware—Volumetric glassware—Methods for use and testing of capacity	—	

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AUSTRALIAN STANDARD

Lead sulfide concentrates — Determination of lead content — Back titration of EDTA after precipitation of lead sulfate

1 Scope

This International Standard specifies a lead sulfate precipitation EDTA titrimetric method for the determination of lead content in lead sulfide concentrates.

The method is applicable to all lead sulfide concentrates with lead content in the range from 10 % (*m/m*) to 80 % (*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 1042:1983, *Laboratory glassware — One-mark volumetric flasks.*

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 stages which comprise the determination are described in 3.1 to 3.4 inclusive.

3.1 Dissolution

Dissolution by fusion with sodium peroxide.

3.2 Precipitation

Double precipitation of lead as a sulfate, with removal of bismuth if applicable.

3.3 EDTA dissolution

Dissolution of lead sulfate in a known volume of an alkaline EDTA solution.

3.4 Titration

Titration of EDTA in excess by a titrated zinc solution.

4 Reagents

During the analysis, use only reagents of recognized analytical grade and distilled water or water of equivalent purity.

4.1 Lead metal, minimum 99,99 % purity.

The surface of the metal shall be free from oxide prior to use and may be cleaned by immersing the metal in nitric acid solution (4.10) diluted 1 + 9 for 1 min, washed well with water followed by acetone and dried in an oven at 50 °C.