

Australian Standard™

**Copper, lead and zinc sulfide
concentrates—Sampling**

**Part 3: Experimental methods for
checking the bias of sampling**

[ISO title: Copper, lead and zinc sulfide concentrates—
Experimental methods for checking the bias of sampling]

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 15 July 1999 and published on 5 August 1999.

The following interests are represented on Committee MN/5:

Australasian Institute of Mining and Metallurgy
Australian Lead Development Association
CSIRO, Division of Minerals
Minerals Council of Australia
The Royal Australian Chemical Institute

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 98655.

Australian Standard™

**Copper, lead and zinc sulfide
concentrates—Sampling**

**Part 3: Experimental methods for
checking the bias of sampling**

Originated as AS 2862.3—1986.
Second edition 1999.

Published by Standards Australia
(Standards Association of Australia)
1 The Crescent, Homebush, NSW 2140

ISBN 0 7337 2867 7

PREFACE

This Standard was prepared by the Standards Australia Committee MN/5, 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.

This Standard supersedes AS 2862.3—1986, *Copper, lead and zinc sulphide concentrates—Sampling, Part 3: Preparation of samples*.

The objective of this Standard is to provide those involved in the sampling of sulfide concentrates with a standardized method of checking the bias of sampling.

This Standard is identical with and has been reproduced from ISO 13292:1997, *Copper, lead and zinc sulfide concentrates—Experimental methods for checking the bias of sampling* 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 13292.

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:

<i>Reference to International Standard or other publication</i>	<i>Australian or Joint Australian/New Zealand Standard</i>
ISO	AS
12743 Copper, lead and zinc sulfide concentrates—Sampling procedures for determination of metal and moisture content	2862 Copper, lead and zinc sulfide concentrates—Sampling 2862.1 Part 1: Sampling procedures for determination of metal and moisture content

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
1 Scope	1
2 Normative references	1
3 General requirements and recommendations	1
4 Sampling and sample processing methods	2
5 Analysis of experimental data	3
Annexes	
A Numerical examples of determining the bias of sampling	7
B Bibliography	11

NOTES

AUSTRALIAN STANDARD

Copper, lead and zinc sulfide concentrates—Sampling

Part 3:

Experimental methods for checking the bias of sampling

1 Scope

This International Standard specifies methods for checking whether there is any bias in the sampling of copper, lead and zinc sulfide concentrates, where the sampling is carried out in accordance with the methods specified in ISO 12743. These methods can also be used for checking whether there is any bias in sample processing and for checking possible significant differences in the analyses of exchange samples and lot samples taken at different places, e.g. at loading and discharge points. Numerical examples are given in annex A.

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 12743:—¹⁾ *Copper, lead and zinc sulfide concentrates—Sampling procedures for determination of metal and moisture content.*

3 General requirements and recommendations

The procedures specified in this International Standard are applicable to paired data only. The results obtained from the method to be checked for bias (referred to as Method B) are compared with the results for a reference method (referred to as Method A), which is considered to produce unbiased results from technical and empirical viewpoints. If there is no significant difference between the results obtained using Method B and Method A, then Method B may be adopted as a routine method.

While the procedures specified in clause 5 are principally designed for checking bias against a reference method, separate measurements of quality characteristics, e.g. at loading (Method A) and discharge (Method B), or analyses of exchange samples may also be compared to check whether there is a statistically significant difference between the results.

Mechanical sampling systems or manual sampling methods are tested for bias by comparing the test results for final system or manually collected samples (Method B) with test results for reference

¹⁾ To be published.