

Australian Standard<sup>®</sup>

---

**Methods for the analysis of zinc  
and zinc alloys**

**Part 6: Determination of copper  
content (0.25% to 1.25%)—Flame  
atomic absorption spectrometric  
method**

---

This Australian Standard was prepared by Committee CH/10, Analysis of Metals. It was approved on behalf of the Council of Standards Australia on 28 June 1994 and published on 19 September 1994.

---

The following interests are represented on Committee CH/10:

Aluminium Development Council  
Australasian Institute of Mining and Metallurgy  
Australian Lead Development Association  
Bureau of Steel Manufacturers  
Copper Technical Data Centre  
National Association of Testing Authorities, Australia  
Railways of Australia Committee

Additional interests participating in preparation of Standard:

Analytical laboratories  
Department of Defence, Materials Research Laboratory  
Steel manufacturers

---

**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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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.

STANDARDS AUSTRALIA

---

**RECONFIRMATION**

**OF**

**AS 1329.6—1994**

**Methods for the analysis of zinc and zinc alloys**

**Part 6: Determination of copper content (0.25% to 1.25%)—Flame atomic  
absorption spectrometric method**

---

**RECONFIRMATION NOTICE**

Technical Committee CH-010 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 31 July 2016.

The following are represented on Technical Committee CH-010:

Australian Aluminium Council  
Bureau of Steel Manufacturers of Australia  
International Copper Association Australia  
International Precious Metals Institute  
National Association of Testing Authorities Australia

## NOTES

## Australian Standard<sup>®</sup>

---

### **Methods for the analysis of zinc and zinc alloys**

### **Part 6: Determination of copper content (0.25% to 1.25%)—Flame atomic absorption spectrometric method**

---

First published as AS 1329.6— 1981.  
Second edition 1994.

PREFACE

This Standard was prepared by the Standards Australia Committee CH/10 on the Analysis of Metals to supersede AS 1329.6—1981, *Methods for the analysis of zinc and zinc alloys, Part 6: Determination of copper content (0.25 percent to 1.25 percent)—Flame atomic absorption spectrometric method.*

CONTENTS

	<i>Page</i>
1 SCOPE . . . . .	3
2 REFERENCED DOCUMENTS . . . . .	3
3 PRINCIPLE . . . . .	3
4 REAGENTS . . . . .	3
5 SAMPLING . . . . .	4
6 APPARATUS . . . . .	4
7 PROCEDURE . . . . .	4
8 CALCULATION . . . . .	5
9 REPRODUCIBILITY . . . . .	5
10 ACCEPTANCE OF RESULTS . . . . .	6
11 TEST REPORT . . . . .	6

© 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.

## STANDARDS AUSTRALIA

## Australian Standard

## Methods for the analysis of zinc and zinc alloys

Part 6: Determination of copper content (0.25% to 1.25%)—  
Flame atomic absorption spectrometric method

**1 SCOPE** This Standard sets out a flame atomic absorption spectrometric method for the determination of the copper content of zinc and zinc alloys. The method is suitable for the determination of copper content in the range 0.25% to 1.25%. The method is suitable for the determination of copper in diecast alloys containing a maximum of:

Aluminium	4.3%
Cadmium	0.003%
Iron	0.08%
Lead	0.005%
Magnesium	0.08%
Tin	0.001%

**2 REFERENCED DOCUMENTS** The following documents are referred to in this Standard:

## AS

- 2134 Recommended practice for chemical analysis by atomic absorption spectrometry
- 2134.1 Part 1: Flame atomic absorption spectrometry
- 2162 Code of practice for the use of volumetric glassware
- 2164 One-mark volumetric flasks
- 2166 One-mark pipettes
- 2167 Straight pipettes
- 2347 Method for the sampling of zinc metal and zinc alloys for chemical analysis
- 2850 Chemical analysis—Interlaboratory test programs—For determining precision of analytical method(s)—Guide to the planning and conduct

## BS

- 4237 Report on reproducibility of methods of chemical analysis used in the iron and steel industry

**3 PRINCIPLE** The sample is dissolved in nitric acid and the copper determined by flame atomic absorption spectrometry.

**4 REAGENTS**

**4.1 General requirements** During the analysis, only reagents of recognized analytical reagent grade, and only distilled water or water of equivalent purity, shall be used. Solutions shall be freshly prepared and, where necessary, filtered.

**4.2 Special reagents**

**4.2.1 Zinc metal** Zinc metal (>99.99% zinc) containing less than 1 µg of copper per g.

**4.2.2 Nitric acid** ( $\rho_{20}$  1.42 g/mL)