AS 1329.7—1994
Reconfirmed 2016

Australian Standard®

Methods for the analysis of zinc and zinc alloys

Part 7: Determination of lead content—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

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1329.7—1994
Methods for the analysis of zinc and zinc alloys
Part 7: Determination of lead content—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

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First published as AS 1329.7— 1980.
Second edition 1994.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 9142 0

PREFACE

This Standard was prepared by the Standards Australia Committee CH/10 on the Analysis of Metals to supersede AS 1329.7—1980, *Methods for the analysis of zinc and zinc alloys*, Part 7: *Determination of lead content—Flame atomic absorption spectrometric method.*

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Australian Standard

Methods for the analysis of zinc and zinc alloys

Part 7: Determination of lead content—Flame atomic absorption spectrometric method

1 SCOPE This Standard sets out a flame atomic absorption spectrometric method for the determination of the lead content of special high grade zinc and high grade zinc, and in diecast alloys containing a maximum of 4.3% aluminium, 0.06% magnesium and 1.3% copper. The method is suitable for the determination of lead content in the range 0.0001% to 0.03%.

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

AS

2134 Recommended practice for 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

2165 Burettes and bulb burettes

2166 One-mark 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 sulfuric acid/nitric acid mixture. Sodium iodide is added and the lead iodide complex is extracted into n-butyl acetate containing 1% of tri-n-octylamine. The lead is determined in the organic phase 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.

4.2 Solutions

4.2.1 *Sulfuric acid/nitric acid mixture* Add, slowly and with stirring, 150 mL of sulfuric acid (ρ_{20} 1.84 g/mL) and 30 mL of nitric acid (ρ_{20} 1.41 g/mL) to 700 mL of water. Cool, dilute to 1 L, and mix.

4.2.2 *Sodium iodide solution (750 g/L)* Dissolve 75 g of sodium iodide and 4 g of ascorbic acid in water. Dilute to 100 mL and mix.

NOTE: Potassium iodide solution (830 g/L) may be used in lieu of sodium iodide solution.