

AS 1329.7—1994

Reconfirmed 2016

Australian Standard<sup>®</sup>

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

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

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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.

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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

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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

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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.

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

The following are represented on Technical Committee CH-010:

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NOTES

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## 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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## STANDARDS AUSTRALIA

## 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 0.3% 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 ( $\rho_{20}$  1.84 g/mL) and 30 mL of nitric acid ( $\rho_{20}$  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.