

Australian Standard[®]

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

**Part 2: Determination of
magnesium 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 9 May 1994 and published on 19 September 1994.

The following interests are represented on Committee CH/10:

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

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RECONFIRMATION

OF

AS 1329.2—1994

Methods for the analysis of zinc and zinc alloys
Part 2: Determination of magnesium content—Flame atomic absorption
spectrometric method

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NOTES

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magnesium content—Flame atomic
absorption spectrometric method**

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PREFACE

This Standard was prepared by the Standards Australia Committee CH/10 on the Analysis of Metals to supersede AS 1329.2—1973, *Methods for the analysis of zinc and zinc alloys, Part 2: Magnesium in zinc alloys (atomic absorption spectrometric method)*.

CONTENTS

	Page
1 SCOPE	3
2 REFERENCED DOCUMENTS	3
3 PRINCIPLE	3
4 REAGENTS	3
5 APPARATUS	4
6 SAMPLING	4
7 PROCEDURE	4
8 CALIBRATION GRAPH	5
9 PRECISION	5
10 ACCEPTANCE OF ANALYTICAL VALUES	6
11 TEST REPORT	6

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STANDARDS AUSTRALIA

Australian Standard

Methods for the analysis of zinc and zinc alloys

Part 2: Determination of magnesium content—
Flame atomic absorption spectrometric method

1 SCOPE This Standard describes a flame atomic absorption spectrometric method for the determination of magnesium in zinc and zinc alloys. The method is applicable to the estimation in the range 0.002% to 0.10% of magnesium and has been found satisfactory in the presence of up to 5.0% of aluminium.

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 hydrochloric acid, and the magnesium content determined by flame atomic absorption spectroscopy.

4 REAGENTS

4.1 General Requirements All reagents shall be of analytical reagent grade, and distilled water or water of equivalent purity shall be used. Solutions shall be freshly prepared each day and, where necessary, filtered.

4.2 Solutions

4.2.1 Hydrochloric acid (1 + 1) Add 500 mL of hydrochloric acid (ρ_{20} 1.16 g/mL) to 500 mL of water.

4.2.2 Hydrogen peroxide (1 + 9) Add 10 mL of hydrogen peroxide (ρ_{20} 1.10 g/mL) to 90 mL with water.

4.3 Standard solutions

4.3.1 Standard magnesium solution (1 mL \equiv 1 mg Mg) Dissolve 1.000 g of pure magnesium in 30 mL of hydrochloric acid (4.2.1), and dilute to 1 L.