

Australian Standard™

**Metal finishing—Preparation and
pretreatment of surfaces**

**Part 6: Chemical conversion treatment
of metals**

This Australian Standard was prepared by Committee MT-009, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 30 May 2003 and published on 11 July 2003.

The following are represented on Committee MT-009:

Australasian Institute of Metal Finishing
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Paint Manufacturer's Federation
Department of Defence
Galvanizers Association of Australia
Institute of Materials Engineering Australia
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STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1627.6—2003

**Metal finishing—Preparation and pretreatment of surfaces
Part 6: Chemical conversion treatment of metals**

RECONFIRMATION NOTICE

Technical Committee MT-009 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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NOTES

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**Part 6: Chemical conversion treatment
of metals**

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PREFACE

This Standard has been prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-009, Metal Finishing, to supersede AS 1627.6—1994.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify procedures and requirements for chemical coatings on metals prior to the application of organic coatings.

During the preparation of this Standard cognizance was taken of the following documents issued by the International Organization for Standardization:

ISO

- 3892:2000 Conversion coatings on metallic materials—Determination of coating mass per unit area—Gravimetric methods
- 9717:1990 Phosphate conversion coatings for metals—Method of specifying requirements
- 10546:1993 Chemical conversion coatings—Rinsed and non-rinsed chromate conversion coatings on aluminium and aluminium alloys

This Standard is Part 6 of a series of Standards covering the preparation and pretreatment of metal surfaces used in metal finishing. The series is as follows:

AS

- 1627 Metal finishing—Preparation and pretreatment of surfaces
- 1627.0 Part 0: Method selection guide
- 1627.1 Part 1: Removal of oil, grease and related contamination
- 1627.2 Part 2: Power tool cleaning
- 1627.4 Part 4: Abrasive blast cleaning
- 1627.5 Part 5: Pickling
- 1627.6 Part 6: Chemical conversion treatment of metals
- 1627.9 Part 9: Pictorial surface preparation standards for painting steel surfaces

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

Phosphate conversion coatings are produced by treatment with solutions containing the appropriate dihydrogen orthophosphates. These coatings are applied principally to ferrous materials, aluminium and zinc. The coating mass per unit area and the apparent density are dependent on—

- (a) the base material and its surface condition;
- (b) the previous mechanical and chemical treatment of the base material; and
- (c) the processing conditions for phosphating.

All phosphate conversion coatings are porous but can be sealed to a substantial degree by appropriate after-treatment.

Chromate and chromium-free conversion coatings are applied to aluminium, magnesium, zinc and their alloys to retard corrosion, as a base for organic films including paints, powder coatings, plastics and adhesives, and as a protective coating having a low electrical contact resistance.

STANDARDS AUSTRALIA

Australian Standard

Metal finishing—Preparation and pretreatment of surfaces

Part 6: Chemical conversion treatment of metals

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements and procedures for the chemical conversion treatment of metals usually prior to the application of a suitable organic protective coating and includes the following processes:

- (a) Phosphate conversion coatings for ferrous and non-ferrous metals.
- (b) Chromate conversion coatings for aluminium, magnesium, zinc and their alloys.

Requirements on information to be supplied by the purchaser at the time of enquiry or order are contained in Appendix A.

This Standard does not include requirements for conversion coatings applied to electroplated work (see AS 1789).

Chromium free coatings are outside the scope of this Standard. Refer to supplier.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1319	Safety signs for the occupational environment
1470	Health and safety at work—Principles and practices
1580	Paints and related materials—Methods of test
1580.408.4	Method 408.4: Adhesion (cross-cut)
1627	Metal finishing—Preparation and pretreatment of surfaces
1627.1	Part 1: Removal of oil, grease and related contamination
1789	Electroplated coatings—Zinc on iron or steel
2331	Methods of test for metallic and related coatings
2331.3.1	Method 3.1: Corrosion and related property tests—Neutral salt spray (NSS) test
2433	Metal finishing—Recommended sampling plans for the inspection and testing of coatings
2508	Safe storage and handling information cards
3780	The storage and handling of corrosive substances
4108	Metal finishing—Glossary of terms used in electroplating and related processes