AS 1834.1—1991
Reconfirmed 2018

Australian Standard®

Material for soldering

Part 1: Solder alloys

This Australian Standard was prepared by Committee MT/5, Lead and Lead Alloys. It was approved on behalf of the Council of Standards Australia on 8 March 1991 and published on 13 May 1991.

The following interests are represented on Committee MT/5:

Australian Lead Development Association
Confederation of Australian Industry
Metal Trades Industry Association of Australia
Telecom Australia

Additional interests participating in preparation of Standard:

Aeronautical Research Laboratory, Salisbury
Australian Tin Information Centre
Electronics industry organizations
Solder manufacturing organizations

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1834.1–1991
Material for soldering
Part 1: Solder alloys

RECONFIRMATION NOTICE

Major stakeholders of this publication have 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 29 August 2018.

NOTES

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Part 1: Solder alloys

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PREFACE

This Standard was prepared by the Standards Australia Committee on Lead and Lead Alloys under the direction of the Metals Standards Board, to supersede AS 1834.1—1986, *Solder alloys*. The revised Standard is technically the same as the previous edition except that it incorporates the two amendments.

As the result of the inclusion of these amendments, a lead-free tin-copper alloy has been added for general use in plumbing applications, particularly for capillary fittings and for joining copper tube, and a lead-free tin-copper-silver alloy has been added for the joining of copper, ferrous and nickel alloys. Both alloys are for use in potable water systems.

This Standard is one of a proposed series of Standards covering materials for soldering. Currently, the only other Standard in the series is AS 1834.2–1986, *Flux-cored solders*.

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1 SCOPE This Standard specifies the chemical composition requirements for tin-lead and other tin-containing solder alloys supplied in the cast, wrought, paste, or powder form. It is not applicable to working solder baths which may be subject to other impurity requirements.

NOTES:

1 For the purpose of this Standard, 'wrought' includes ribbon, wire, rod and preforms.

2 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry and order are contained in Appendix A.

3 Typical properties and uses of solders specified in this Standard are given in Appendix B.

4 The contaminant limits for working solder baths used for the soldering of printed board assemblies are given in AS 3508.1.

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

AS
1671 Lead and lead alloys
1671.1 Part 1: Determination of antimony content—Flame atomic absorption spectrometric method
1671.2 Part 2: Determination of low concentrations of antimony in lead alloys containing not more than 2.5 percent arsenic and 0.10 percent copper—Titrimetric method
1671.3 Part 3: Determination of high concentrations of antimony in lead alloys containing not more than 2.5 percent arsenic and 1.0 percent copper—Titrimetric method
1671.4 Part 4: Determination of tin in antimonial lead—Flame atomic absorption spectrometric method

2292 Methods for the analysis of solders
2292.1 Part 1: Determination of tin (volumetric method)
2292.2 Part 2: Determination of silver, bismuth, cadmium, copper, antimony, iron and zinc—Flame atomic absorption spectrometric method

2534 Lead and lead alloys—Sampling and preparation of samples for chemical analysis

3508 Printed board assemblies
3508.1 Part 1: Preparation, handling and assembly

BS
3338 Methods for the sampling and analysis of tin and tin alloys
3338.12 Part 12: Methods for the sampling of solders

ASTM
B32 Specification for solder metal

E46 Method for chemical analysis of lead- and tin-base solder

3 DESIGNATION The solder designation shall consist of the following components—

(a) the number of this Australian Standard, i.e. AS l834.1;

(b) the nominal tin content, followed by the chemical symbol for tin; and

(c) the nominal contents of any other alloy additions, each followed by the chemical symbol for the element.

Example 1

AS 1834.1/70Sn.

Example 2

AS 1834.1/30Sn/1.8Sb.

Example 3

AS 1834.1/95Sn/5Sb.

NOTE: The lead content is not included in the designation.

4 CHEMICAL COMPOSITION

4.1 General The chemical composition of solder alloys shall meet the requirements of Table 1.

4.2 Methods of sampling and analysis Methods used for sampling for chemical analysis shall not be less accurate than those given in AS 2534, BS 3338.12, and ASTM B32.

The methods of chemical analysis shall not be less accurate than those specified in AS 1671.1, AS 1671.2, AS 1671.3 and AS 1671.4, AS 2292.1 and AS 2292.2, BS 3338 and ASTM E46.