SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS4751	REV. C

Issued	1970-11
Revised	1994-02
Noncurrent	2005-05
Reaf Nonc	2012-04

Superseding AMS4751B

Tin - Lead Eutectic
63Sn - 37Pb

(Composition similar to UNS L13630)

RATIONALE

AMS4751C has been reaffirmed to comply with the SAE five-year review policy.

NONCURRENT NOTICE

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of May, 2005. It is recommended, therefore, that this specification not be specified for new designs.

"NONCURRENT" refers to those specifications which have previously been widely used and which may be required for production or processing of existing designs in the future. The Aerospace Materials Division, however, does not recommend these specifications for future use in new designs. "NONCURRENT" specifications are available from SAE upon request.

Similar but not necessarily identical product is covered in the following specification. However, this is provided for information only and does not constitute authority to substitute this specification for the "NONCURRENT" specification.

IPC/EIA J-STD-006 Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications, Requirements for

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS4751C

1. SCOPE:

1.1 Form:

This specification covers a tin-lead alloy in the form of bars, ingots, pellets, ribbon, and round wire.

1.2 Application:

This solder has been used typically for effecting joints in electrical and electronic circuits where the reliability of the joint requires good control of the purity of the solder, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

2.1 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM E 46 Chemical Analysis of Lead- and Tin-Base Solder

2.3 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-2073-1 DOD Material, Procedures for Development and Application of Packaging Requirements

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 46, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE I - Composition

Element	Min	Max
Tin	62.5	63.5
Antimony	0.20	0.50
Bismuth	--	0.25
Copper	--	0.02
Arsenic	--	0.02
Iron	--	0.008
Zinc	--	0.005
Aluminum	--	0.005
Other Elements, total	--	0.08
Lead	remainder	

3.2 Quality:

Solder, as received by purchaser, shall be uniform in color, quality, and condition, and free from foreign materials and from imperfections detrimental to its working qualities. Ribbon and wire shall be smooth, bright, and free from slivers, ragged edges, and other injurious imperfections.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

(R)

The vendor of the solder shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the solder conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed on each lot.

4.3 Sampling and Testing:

(R)

Sufficient solder shall be taken at random from each lot to perform all required tests. A lot shall be all solder from a single melt.

4.3.1 The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.4 Reports:

The vendor of the solder shall furnish with each shipment a report showing the results of tests to determine conformance to the acceptance test requirements. This report shall include the purchase order number, lot number, AMS 4751B, form, size, and quantity.

4.5 Resampling and Retesting:

(R) If any specimen used in the above tests fails to meet the specified requirements, disposition of the solder may be based on the results of testing three additional specimens from the same bar, wire, or ribbon as each nonconforming sample. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the solder represented. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Identification and Packaging:

5.1.1 Solder shall be supplied in containers of a type and size agreed upon by purchaser and vendor.

5.1.2 Each package of solder shall be permanently and legibly marked with not less than the following information:

TIN - LEAD ALLOY EUTECTIC SOLDER
AMS 4751B
LOT NUMBER _____
MANUFACTURER'S IDENTIFICATION _____
NOMINAL SIZE _____
WEIGHT _____

5.1.3 (R) The solder shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the solder to ensure carrier acceptance and safe delivery.

5.1.4 (R) For direct U.S. Military procurement, packaging shall be in accordance with MIL-STD-2073-1, Commercial Level, unless Level A is specified in the request for procurement.