

**AEROSPACE  
MATERIAL  
SPECIFICATION**

**SAE AMS4750**

**REV. D**

Issued	1940-02
Revised	1988-10
Noncurrent	2005-05
Reaf Nonc	2012-04
Superseding AMS4750C	

Solder, Tin-Lead  
45Sn - 55Pb

**RATIONALE**

AMS4750D 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

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1. SCOPE:

1.1 Form: This specification covers a tin-lead solder in the form of wire, strip, bars, and pigs.

1.2 Application: Primarily for bit soldering or sweating joints in plain, tinned, or galvanized iron or steel, copper, and copper alloys.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM E46 - Chemical Analysis of Lead- and Tin-Base Solder

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

### 3. TECHNICAL REQUIREMENTS:

- 3.1 Composition: Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E46, by spectrochemical methods, or by other analytical methods acceptable to purchaser:

	min	max
Tin	44.00	45.00
Antimony	--	0.40
Bismuth	--	0.25
Copper	--	0.08
Iron	--	0.02
Zinc	--	0.005
Aluminum	--	0.005
Residual Elements, total (3.1.1)	--	0.08
Lead	remainder	

- 3.1.1 Determination not required for routine acceptance.

- 3.2 Melting Range: Shall be 361° - 441°F (183° - 227°C).

- 3.3 Quality: Solder shall be uniform in color, clean, and free from foreign materials and from oxide segregation.

- 3.4 Size and Tolerances: Shall be as specified by purchaser.

### 4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: The vendor of solder shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.4. 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:

- 4.2.1 Acceptance Tests: Tests to determine conformance to requirements for composition (3.1), quality (3.3), and size and tolerance (3.4) are classified as acceptance tests and shall be performed on each lot.

- 4.2.2 Periodic Tests: Tests to determine conformance to requirements for melting range (3.2) are classified as periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling: Shall be in accordance with the following; a lot shall be all solder produced in a single furnace charge and presented for vendor's inspection at one time.

4.3.1 Composition: One sample from each lot.

4.3.2 Other Technical Requirements: As agreed upon by purchaser and vendor.

4.4 Reports:

4.4.1 The vendor of solder shall furnish with each shipment a report showing the results of tests to determine conformance to the composition requirements and stating that the solder conforms to the other technical requirements of this specification. This report shall include the purchase order number, AMS 4750C, lot number, form, size, and quantity.

4.4.2 When parts made of this solder or assemblies requiring use of this solder are supplied, the part or assembly manufacturer shall inspect each lot of solder to determine conformance to the technical requirements of this specification and shall furnish with each shipment a report stating that the solder conforms. This report shall include the purchase order number, AMS 4750C, part or assembly number, and quantity.

4.5 Resampling and Retesting: 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 for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the solder represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Identification:

5.1.1 Solder shall be identified as agreed upon by purchaser and vendor.

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

SOLDER, TIN-LEAD

AMS 4750C

LOT NUMBER \_\_\_\_\_

MANUFACTURER'S IDENTIFICATION \_\_\_\_\_

NOMINAL DIMENSIONS \_\_\_\_\_

WEIGHT \_\_\_\_\_