



Standard Specification for Solder Metal¹

This standard is issued under the fixed designation B32; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers solder metal alloys (commonly known as soft solders) used in non-electronic applications, including but not limited to, tin-lead, tin-antimony, tin-antimony-copper-silver, tin-antimony-copper-silver-nickel, tin-silver, tin-copper-silver, and lead-tin-silver, used for the purpose of joining together two or more metals at temperatures below their melting points. Electronic grade solder alloys and fluxed and non-fluxed solid solders for electronic soldering applications are not covered by this specification as they are under the auspices of IPC – Association Connecting Electronic Industries.

1.1.1 These solders include those alloys having a liquidus temperature not exceeding 800°F (430°C).

1.1.2 This specification includes solders in the form of solid bars, ingots, powder and special forms, and in the form of solid and flux-core ribbon, wire, and solder paste.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to become familiar with all hazards including those identified in the appropriate Material Safety Data Sheet (MSDS) for this product/material as provided by the manufacturer; to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

¹ This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.02 on Refined Lead, Tin, Antimony, and Their Alloys.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D269 Test Method for Insoluble Matter in Rosin and Rosin Derivatives

D464 Test Methods for Saponification Number of Naval Store Products Including Tall Oil and Other Related Products

D465 Test Methods for Acid Number of Naval Stores Products Including Tall Oil and Other Related Products

D509 Test Methods of Sampling and Grading Rosin

E28 Test Methods for Softening Point of Resins Derived from Pine Chemicals and Hydrocarbons, by Ring-and-Ball Apparatus

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E46 Test Methods for Chemical Analysis of Lead- and Tin-Base Solder (Withdrawn 1994)³

E51 Method for Spectrographic Analysis of Tin Alloys by the Powder Technique (Withdrawn 1983)³

E55 Practice for Sampling Wrought Nonferrous Metals and Alloys for Determination of Chemical Composition

E87 Methods for Chemical Analysis of Lead, Tin, Antimony and Their Alloys (Photometric Method) (Withdrawn 1983)³

E88 Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition

2.2 Federal Standard:⁴

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)

2.3 Military Standard:⁵

MIL-STD-129 Marking for Shipment and Storage

3. Terminology

3.1 Definitions:

3.1.1 *producer, n*—the primary manufacturer of the material.

3.2 Definitions of Terms Specific to This Standard:

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from Global Engineering Documents, 15 Inverness Way, East Englewood, CO 80112-5704, <http://global.ihs.com>.

⁵ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.