



Designation: B 907 – 00a

Standard Specification for Zinc, Tin and Cadmium Base Solders¹

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1. Scope *

1.1 This specification covers solder metal alloys (commonly known as soft solders), including zinc-aluminum, zinc-aluminum-copper, zinc-tin, zinc-tin-copper, zinc-cadmium-tin, zinc-cadmium, tin-zinc, cadmium-zinc, cadmium-zinc-silver, and cadmium-silver, used for the purpose of joining together two or more metals at temperatures below their melting points.

1.1.1 Certain alloys are also used in Thermal Spray Wire by the electronics industry (as noted in the Annex part of this specification). B 833 covers Zinc and Zinc Alloy Wire for Thermal Spraying (Metallizing) used primarily for the corrosion protection of steel (as noted in the Annex part of this specification).

1.1.2 Tin base alloys are included in this specification because their use in the electronics industry is different than the major use of the tin and lead solder compositions specified in B 32.

1.1.3 These solders include alloys having a nominal liquidus temperature not exceeding 850°F (455°C).

1.1.4 This specification includes solder in the form of solid bars, ingots, powder and special forms, and in the form of solid wire, and solder paste.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 **Toxicity**—Warning: Soluble and respirable forms of cadmium may be harmful to human health and the environment in certain forms and concentrations. Therefore, ingestion and inhalation of cadmium should be controlled under the appropriate regulations of the U.S. Occupational Safety and Health Administration (OSHA). Cadmium-containing alloys and coatings should not be used on articles that will contact food or beverages, or for dental and other equipment that is normally inserted in the mouth. Similarly, if articles using cadmium-containing alloys or coatings are welded, soldered, brazed, ground, flame-cut, or otherwise heated during fabrication, adequate ventilation must be provided to maintain occupational

cadmium exposure below the OSHA Permissible Exposure Level (PEL).

1.4 *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 Data Sheet 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:

B 32 Specification for Solder Metal²

B 833 Specification for Zinc and Zinc Alloy Wire for Thermal Spraying (Metallizing)²

B 899 Terminology Relating to Non-ferrous Metals and Alloys²

E 29 Practice for using Significant Digits in Test Data to Determine Conformance with Specifications.³

E 46 Test Methods for Chemical Analysis of Lead and Tin-Base Solder; discontinued 1994

E 47 Test Methods for Chemical Analysis of Zinc Die Casting Alloys

E 51 Method for Spectrographic Analysis of Tin-based Alloys by the Powder Technique; discontinued 1984

E 55 Practice for sampling Wrought Nonferrous Metals and Alloys for Determination of Chemical Composition

E 87 Methods for Chemical Analysis of Lead, Tin, Antimony, and Their Alloys (Photometry Method); discontinued 1984

E 88 Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition⁴

E 527 Practice for Numbering Metals and Alloys

E 536 Test Method for Chemical Analysis of Zinc and Zinc Alloys

2.2 Federal Standard:

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)⁵

¹ This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.04 Zinc and Cadmium.

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² *Annual Book of ASTM Standards*, Vol 02.04.

³ *Annual Book of ASTM Standards*, Vol 14.02.

⁴ *Annual Book of ASTM Standards*, Vol 03.05.

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.