Designation: B440 – 12 (Reapproved 2017)

Standard Specification for Cadmium[1]

This standard is issued under the fixed designation B440; 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.

1. Scope

1.1 This specification covers refined cadmium metal in slab, ball or stick form.

1.2 *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).

1.3 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.

1.4 *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 Safety Data Sheet (SDS) for this product/material as provided by the manufacturer, to establish appropriate safety, health, and environmental practices, and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B899 Terminology Relating to Non-ferrous Metals and Alloys

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

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

E396 Test Methods for Chemical Analysis of Cadmium

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

3. Terminology

3.1 Terms shall be defined in accordance with Terminology B899.

4. Ordering Information

4.1 Orders for cadmium under this specification shall include the following information:

4.1.1 ASTM designation,

4.1.2 Quantity (weight),

4.1.3 Grade (Table 1), and

4.1.4 Shape and size (Section 7).

5. Materials and Manufacture

5.1 The cadmium shall be furnished in commercial standard forms or shapes requested by purchaser.

6. Chemical Requirements

6.1 The cadmium supplied shall conform to the requirements of Table 1 for one of the three grades.

7. Shape and Size

7.1 Various forms and sizes of commercially available cadmium are:

Form	Shape and Size
Ball	Spherical, about 2 in. (50.8 mm) in diameter
Stick	Bar, about 9 × ½ × ⅜ in. (229 × 9.5 mm) or stick about 9 × ½ in. (229 × 12.7 mm) in diameter.
Slab	Plate or bar, varying in weight from about 20 to 60 lb (9.0 to 27.2 kg)

[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 on Zinc and Cadmium.

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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.