



Designation: B413 – 97a (Reapproved 2021)

Standard Specification for Refined Silver¹

This standard is issued under the fixed designation B413; 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 silver cast bar² form in three grades as follows:

1.1.1 *Grade 99.90* (UNS P07020)—Silver having a minimum fineness of 999.0 commonly referred to as “commercial bar” or “bullion.”

1.1.2 *Grade 99.95* (UNS P07015)—Silver having a minimum fineness of 999.5.

1.1.3 *Grade 99.99* (UNS P07010)—A premium grade having a minimum fineness of 999.9.

1.2 The values stated in inch-pound units are to be regarded as 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 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.*

1.4 *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:*³

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

¹ This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.05 on Precious Metals and Electrical Contact Materials.

Current edition approved Nov. 1, 2021. Published December 2021. Originally approved in 1964. Last previous edition approved in 2017 as B413 – 97a (2017). DOI: 10.1520/B0413-97AR21.

² Other forms of unfabricated silver of commerce are not to be excluded under this specification.

³ 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.

E378 Test Method for Spectrographic Analysis of Silver by the Powder Technique (Withdrawn 2004)⁴

3. Materials and Manufacture

3.1 The silver shall be produced by any process that yields a product capable of meeting the requirements of this specification.

3.2 The bars shall be of a quality generally acceptable to the trade.

3.3 The manufacturer shall use care to have each shipment of as uniform quality as possible.

4. Chemical Composition

4.1 The refined silver shall conform to the chemical composition prescribed in **Table 1**.

5. Lots

5.1 A single melt shall constitute a lot for sampling.

6. Method of Analysis

6.1 The composition of the bars or samples shall be determined by any destructive or nondestructive method agreed upon between the manufacturer and the purchaser. Unless otherwise specifically agreed, chemical methods will be used for analysis. The chemical composition of the materials set forth in this specification shall be determined, in case of disagreement, in accordance with Test Method **E378**. The selection of methods for the determination of elements not covered by that test method shall be a matter of agreement between the manufacturer and the purchaser.

7. Sampling

7.1 The value of this material is such that special attention must be paid to sampling procedures. If the purchaser and the manufacturer agree that samples most representative of the assay value of a melt are required, the samples should be taken from the silver melt as it is ready for pouring into molds. The samples should consist of shot or cast pins.

⁴ The last approved version of this historical standard is referenced on www.astm.org.