



Designation: B805 – 06 (Reapproved 2017)^{ε1}

Standard Specification for Precipitation Hardening Nickel Alloys Bar and Wire¹

This standard is issued under the fixed designation B805; 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.

^{ε1} NOTE—Editorial changes were made throughout in April 2017.

1. Scope*

1.1 This specification covers nickel alloys UNS N07716, N07725, N07773, N07776, N09777, and N09925 in the form of hot or cold finished rounds, squares, hexagons, rectangles, and cold finished wire.

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 The following precautionary caveat pertains only to the test methods, portion, Section 13, of this specification: *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 and health 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:²

B880 Specification for General Requirements for Chemical Check Analysis Limits for Nickel, Nickel Alloys and Cobalt Alloys

B899 Terminology Relating to Non-ferrous Metals and Alloys

¹ This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.07 on Refined Nickel and Cobalt 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.

E8/E8M Test Methods for Tension Testing of Metallic Materials

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

E1473 Test Methods for Chemical Analysis of Nickel, Cobalt and High-Temperature Alloys

3. Terminology

3.1 *Definitions*—Definitions for terms defined in Terminology **B899** shall apply unless otherwise defined by the requirements of this document.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *bar, n*—material of round, rectangular (flats), hexagonal, square, or other solid section up to and including 10 in. (254 mm) in width and 1/8 in. (3.2 mm) or over in thickness in straight lengths.

3.2.2 *wire, n*—a cold-worked solid product of uniform cross section along its whole length, usually supplied in coil form.

4. Ordering Information

4.1 It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Examples of such requirements include, but are not limited to the following:

4.1.1 Alloy name or UNS number,

4.1.2 ASTM designation and date of issue,

4.1.3 Quantity,

4.1.4 Form (bar or wire),

4.1.5 Dimensions,

4.1.6 Condition,

4.1.7 Finish,

4.1.8 *Certification*—State if certification is required,

4.1.9 *Samples for Product Analysis*—State if samples for product analysis are to be furnished, and

4.1.10 *Purchaser Inspection*—State if purchaser inspection is required and which tests or inspections are to be witnessed.

5. Chemical Composition

5.1 The material shall conform to the composition limits specified in **Table 1**.

5.2 If a product (check) analysis is performed, the material shall conform to the tolerances provided in Specification **B880**.

*A Summary of Changes section appears at the end of this standard