



Designation: B 446 – 02³

Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625), Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219), and Nickel-Chromium-Molybdenum-Tungsten Alloy (UNS N06650)* Rod and Bar¹

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

1. Scope

1.1 This specification covers nickel-chromium-molybdenum-columbium (UNS N06625), nickel-chromium-molybdenum-silicon alloy (UNS N06219), and Nickel-Chromium-Molybdenum-Tungsten Alloy (UNS N06650)* in the form of hot-worked rod and bar and cold-worked rod in the conditions shown in Table 1.

1.1.1 UNS N06625 products are furnished in two grades of different heat-treated conditions:

1.1.1.1 *Grade 1 (Annealed)* —Material is normally employed in service temperatures up to 1100°F (593°C).

1.1.1.2 *Grade 2 (Solution Annealed)*—Material is normally employed in service temperatures above 1100°F (593°C) when resistance to creep and rupture is required.

NOTE 1—Hot-working or reannealing may change properties significantly, depending on working history and temperatures.

1.1.2 Alloys UNS N06219 and UNS N06650 are supplied in solution annealed condition only.

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 The following precautionary caveat pertains only to the test methods portion, Section 12, 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 Material Safety 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:*

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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* New designation established in accordance with Practice E 527 and SAE J 1086, Practice for Numbering Metals and Alloys (UNS).