



AEROSPACE MATERIAL SPECIFICATION	AMS5712™	REV. L
	Issued 1960-06 Reaffirmed 2012-01 Revised 2022-08 Superseding AMS5712K	
Nickel Alloy, Corrosion- and Heat-Resistant, Bars, Forgings, and Rings 53Ni - 19Cr - 11Co - 9.8Mo - 3.2Ti - 1.6Al - 0.006B Vacuum Melted, Solution Heat Treated Precipitation Hardenable (Composition similar to UNS N07041)		

RATIONALE

AMS5712L is the result of a Five-Year Review and update of the specification. The revision prohibits unauthorized exceptions (3.8, 4.4.2, 5.2.1.1, 8.5), clarifies size limits for specific product forms (1.1, 3.5.1.2.1), updates composition (3.1), adds note on reporting additional elements (3.1.1), adds equivalent cooling rate (3.5.1.2.1), updates transverse testing exception (3.5.1.2.1), removes product specific exception (Table 2), adds strain rate control and implementation time (3.5.1.2.1.4), updates cut size requirement (4.4.3), updates reporting requirements (4.1, 4.4.4), allows prior revisions (8.4), and adds forging stock notes and removes engineering approval (8.6).

1. SCOPE

1.1 Form

This specification covers a corrosion- and heat-resistant nickel alloy in the form of bars 3.00 inches (76.2 mm) and under in nominal diameter, thickness or for hexagons least distance between parallel sides, forgings, flash welded rings 3.00 inches (76.2 mm) and under in nominal radial thickness, and stock of any size for forging, flash welded rings, or heading (see 8.5).

1.2 Application

These products have been used typically for parts such as turbine rotors, shafts, bolts, dowels, and fittings, requiring high strength up to 1600 °F (871 °C) after precipitation heat treatment and oxidation resistance up to 1800 °F (982 °C), but usage is not limited to such applications.

1.3 Classification

Alloy supplied to this specification is classified as follows:

Type 1 - Vacuum induction melted followed by vacuum arc consumable electrode remelting

Type 2 - Vacuum induction melted followed by electroslag remelting

1.3.1 Unless a specific type is ordered, either type may be supplied.

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