



AEROSPACE MATERIAL SPECIFICATION

AMS5746™**REV. G**

Issued	1960-06
Reaffirmed	2000-11
Revised	2005-08
Stabilized	2022-06

Superseding AMS5746F

Alloy, Corrosion- and Heat-Resistant, Bars and Forgings
15Cr - 45Ni - 4.1Mo - 4.1W - 3.0Ti - 1.0Al - 31Fe (D979)
Consumable Electrode Vacuum Melted
Solution and Precipitation Heat Treated
(Composition similar to UNS N09979)

RATIONALE

This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because it contains mature technology that is not expected to change and thus no further revisions are anticipated.

NOTE: Previously, this document was reaffirmed. The last technical update of this document occurred in August, 2005. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this specification, including exceptions listed on the certification. In many cases, the purchaser may represent a sub-tier supplier and not the cognizant engineering organization.

STABILIZED NOTICE

AMS5746G has been declared "STABILIZED" by SAE AMS Committee F Corrosion and Heat Resistant Alloys and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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Documents

Document Sharing Hub

1. SCOPE:

1.1 Form:

This specification covers a corrosion and heat-resistant nickel alloy in the form of bars, forgings, and stock for forging or heading.

1.2 Application:

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

2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2241	Tolerances, Corrosion and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire
AMS 2248	Chemical Check Analysis Limits, Corrosion and Heat-Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys

2.1 (Continued):

AMS 2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS 2374	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steel and Alloy, Forgings
AMS 2375	Control of Forgings Requiring First Article Approval
AMS 2750	Pyrometry
AMS 2806	Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat-Resistant Steels and Alloys
AMS 2808	Identification, Forgings

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM E 8	Tension Testing of Metallic Materials
ASTM E 8M	Tension Testing of Metallic Materials (Metric)
ASTM E 10	Brinell Hardness of Metallic Materials
ASTM E 139	Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials
ASTM E 292	Conducting Time-for-Rupture Notch Tension Tests of Materials
ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 353, by spectrochemical methods, or by other analytical methods acceptable to purchaser.