AN AMERICAN NATIONAL STANDARD

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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

AMS 5669

Issued 9-1-65
Revised 7-1-85

ALLOY BARS, CORROSION AND HEAT RESISTANT
Nickel Base - 15.5Cr - 0.95(Cb + Ta) - 2.5Ti - 0.70Al - 7.0Fe
Consumable Electrode or Vacuum Induction Melted

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the original issue of the subject specification.

REAFFIRMED

MAY 1 995

REAFFIRMED

OCT 1991

AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

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1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for machined parts requiring high strength at temperatures in the range of 800 - 1100 F (427 - 593 C), particularly where welding is involved.

3. COMPOSITION:

	min	max
Carbon	--	0.08
Manganese	--	0.35
Silicon	--	0.35
Phosphorus (1)	--	0.015
Sulfur	--	0.010
Chromium	14.00	17.00
Nickel + Cobalt	70.00	--
Cobalt (1)	--	1.00
Columbium + Tantalum	0.70	1.20
Titanium	2.25	2.75
Aluminum	0.40	1.00
Iron	5.00	9.00
Copper	--	0.50

(1) Determination not required for routine acceptance.

3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2269.

4. CONDITION: Unless otherwise specified, bars shall be supplied in the following condition:

4.1 Bars 4 In. and Under in Diameter or Distance Between Parallel Sides: As hot finished: round bars shall be ground or turned except that bars under 0.5 in. in diameter, when so ordered, shall be cold drawn.

4.2 Bars Over 4 In. in Diameter or Distance Between Parallel Sides: As forged or as hot rolled.

5. TECHNICAL REQUIREMENTS:

5.1 Properties After Heat Treatment: The product shall conform to the following requirements after being solution heat treated by heating to 1800 F ± 25 (982.2 C ± 14), holding at heat for 1 hr, and cooling at a rate equivalent to air cool or faster and then precipitation heat treated by heating to 1350 F ± 15 (732.2 C ± 8.3), holding at heat for 8 hr, cooling at a rate of 100 F ± 15 (55.6 C ± 8.3) per hr to 1150 F ± 15 (621.1 C ± 8.3), holding at 1150 F ± 15 (621.1 C ± 8.3) for 8 hr, and air cooling.

Note. Instead of the 100 F (55.6 C) per hr cooling rate to 1150 F ± 15 (621.1 C ± 8.3), material may be furnace cooled at any rate provided the time at 1150 F ± 15 (621.1 C ± 8.3) is adjusted to give a total precipitation heat treatment time of 18 hours.