AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 5667

Issued 12-1-47
Revised

ALLOY, CORROSION AND HEAT RESISTANT
Nickel Base - 15Cr - 2.5Ti - 1Cb - 0.7Al
Precipitation Heat Treated

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

2. FORM: Bars, billets, and forgings.

3. APPLICATION: Primarily parts, such as turbine wheels or discs, requiring high strength at 800-1100F.

4. COMPOSITION:

Carbon	0.08 max
Manganese	1.00 max
Silicon	0.50 max
Sulfur	0.01 max
Chromium	14.00 - 16.00
Nickel	70.00 min
Columbium	0.70 - 1.20
Titanium	2.25 - 2.75
Aluminum	0.40 - 1.00
Iron	9.00 max
Copper	0.20 max

5. CONDITION: (a) Unless otherwise specified, bars and forgings shall be treated by heating to 1625 F ± 25, holding at heat 24 hours and air cooling.

(b) Stock ordered for forging shall be supplied as ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS: (a) Hardness (as received).- Bars and forgings shall have hardness not higher than Brinell 229 or equivalent.

(b) Grain Size.- When grain size is specified, it shall be interpreted as the average number of grains per linear inch, at 100X magnification, counted along two axes at right angles to each other.

(c) Physical Properties after Aging.- Specimens taken from bars and forgings shall, after aging at 1300 F ± 10 for 20 hours and air cooling, be capable of meeting the following requirements:

Tensile Strength, psi	165,000 min
Yield Strength at 0.2% offset or at 0.0111 inch in 2 in. extension under load, psi	110,000 min
Elongation, % in 4D	20 min
Reduction of Area, %	20 min
Hardness, Brinell	302 min

7. QUALITY: The product shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts.