# AERONAUTICAL MATERIAL SPECIFICATION

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29 West 39th Street
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AMS5770 B

Issued 7-1-48
Revised 6-1-51

## ALLOY, CORROSION AND HEAT RESISTANT
## Iron Base - 20Cr - 20Ni - 20Co - 4W - 4Mo - 4(Cb+Ta)
## Solution and Precipitation Treated

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

2. FORM: Bars, forgings, and forging stock.

3. APPLICATION: Primarily for parts and assemblies, such as turbine rotors, shafts, buckets, and bolts, requiring high strength up to 1500 F and oxidation resistance up to 1800 F.

4. COMPOSITION:

| | | Check Analysis Under Min or Over Max | |
|---|---|---|---|
| Carbon | 0.38 - 0.48 | 0.00 | 0.00 |
| Manganese | 2.00 max | -- | 0.04 |
| Silicon | 1.00 max | -- | 0.05 |
| Phosphorus | 0.040 max | -- | 0.005 |
| Sulfur | 0.030 max | -- | 0.005 |
| Chromium | 19.00 - 22.00 | 0.25 | 0.25 |
| Nickel | 18.50 - 21.50 | 0.20 | 0.20 |
| Cobalt | 18.50 - 21.50 | 0.10 | 0.10 |
| Molybdenum | 3.50 - 4.50 | 0.10 | 0.10 |
| Tungsten | 3.50 - 4.50 | 0.05 | 0.05 |
| Columbium+Tantalum | 3.50 - 4.50 | 0.03 | 0.03 |
| Copper | 0.50 max | -- | -- |
| Iron | remainder | | |

5. CONDITION:

5.1 Bars: Cold finished, solution and precipitation heat treated.

5.2 Forgings: Solution and precipitation heat treated.

5.3 Forging Stock: As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

6.1 Heat Treatment: Bars and forgings shall be solution heat treated by heating to 2200 F ± 20, holding at that temperature for not less than one hour, followed by quenching in water, and shall then be precipitation heat treated by heating to 1400 F ± 10, holding at that temperature for not less than 10 hours followed by air cooling.

6.2 Grain Size: Shall be an average of 1 or finer in accordance with grain size chart in ASTM E19-46.