AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5768 A

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ALLOY, CORROSION AND HEAT RESISTANT
Iron Base - 20Cr - 20Ni - 20Co - 3Mo - 2W - 1(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, billets, and forgings.

3. APPLICATION: Parts and assemblies, such as turbine rotors, shafts, buckets and bolts, requiring high strength up to 1350 F and oxidation resistance up to 1800 F.

4. COMPOSITION:

		Check Analysis	
		Under Min or	Over Max
Carbon	0.08 - 0.16	0.01	0.01
Manganese	1.00 - 2.00	0.04	0.04
Silicon	1.00 max	----	0.05
Phosphorus	0.040 max	----	0.005
Sulfur	0.030 max	----	0.005
Chromium	20.00 - 22.50	0.25	0.25
Nickel	19.00 - 21.00	0.20	0.20
Cobalt	18.50 - 21.00	0.20	0.20
Molybdenum	2.50 - 3.50	0.10	0.10
Tungsten	2.00 - 3.00	0.10	0.10
Columbium + Tantalum	0.75 - 1.25	0.05	0.05
Nitrogen	0.10 - 0.20	0.01	0.01
Iron	Remainder		

5. CONDITION:

5.1 Bars and Forgings: Solution and precipitation heat treated after the final rolling or forging operations.

5.2 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 2175 F ± 25, holding at that temperature for one hour followed by quenching in water, and shall then be precipitation heat treated by heating to 1500 F ± 25, holding at that temperature for four hours followed by air cooling.

6.2 Hardness: Bars and forgings shall have hardness of Brinell 193-241 or equivalent.

6.3 Stress Rupture Test at 1350 F: Specimens taken from bars and forgings shall be capable of meeting the following requirements: