

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5652

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Revised

STEEL, CORROSION AND HEAT RESISTANT 25Cr - 20Ni - 2Si

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:** Parts, such as nozzle diaphragm vanes and assemblies requiring both corrosion and heat resistance, and where such parts may require welding during fabrication. Parts and assemblies requiring oxidation resistance up to approximately 2000F but useful at the higher temperatures only when stresses are very low. Strength at elevated temperatures is similar to that of the 18-8 types. The specified silicon content improves oxidation resistance with some sacrifice of weldability and ductility.
4. **COMPOSITION:**

		Check Analysis	
		Under Min	or Over Max
Carbon	0.18 max	--	0.01
Manganese	1.00 - 2.00	0.04	0.04
Silicon	1.70 - 2.30	0.10	0.10
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	23.00 - 25.00	0.25	0.25
Nickel	19.00 - 22.00	0.20	0.20
Molybdenum	0.50 max	--	0.03
5. **CONDITION:**
 - (a) Unless otherwise specified bars shall be hot rolled and solution heat treated, scale free having hardness not exceeding Brinell 187 or equivalent.
 - (b) Forgings shall be solution heat treated, scale free having hardness not exceeding Brinell 187 or equivalent.
 - (c) Stock ordered for forging shall be supplied in the condition and finish ordered by the forging manufacturer.
6. **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. Material in which defects are revealed during fabrication will be subject to rejection.
7. **TOLERANCES:** Unless otherwise specified, tolerances for bars shall conform to the latest issue of AMS 2241 as applicable.
8. **REPORTS:** (a) Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a notarized report of the results of tests for chemical composition of each heat in each shipment. This report shall include the purchase order number, heat number, material specification number, size and quantity from each heat. If forgings are supplied, the part number and size of steel used to make the forgings shall also be included.