

## Hastelloy® alloy X

UNS N06002  
W.Nr 2.4665

### Applicable Specifications

Wire & Bar AMS 5754, AMS 5798, DMD 0491, GE B21B111, ASTM B572

**Description:** HASTELLOY® alloy X is a nickel-chromium-iron-molybdenum alloy that possesses an exceptional combination of oxidation resistance, fabricability and high-temperature strength. Alloy X exhibits good ductility after prolonged exposure to high temperatures. HASTELLOY® X has excellent hot and cold formability and can be welded readily by a variety of techniques.

**Applications include:** Land-based Gas Turbine, High Temperature fixtures, Petrochemical Applications

**Industries supplied include:** Aerospace, Automotive, Industrial Heating, Chemical Processing

### Nominal Composition

	C	Mn	Si	P	S	Cr	Co	Mo	W	Fe	Al	Ti	Ni
min	0.05					20.50	0.50	8.00	0.20	17.00			47 (bal)
max	0.15	1.00	1.00	0.040	0.030	23.00	2.50	10.00	1.00	20.00	0.50	0.15	

### Physical Properties

	At 70°F	At 20°C
Density	0.297 lb/in <sup>3</sup>	8.22 g/cm <sup>3</sup>
Modulus of Elasticity (E)	29.8 x 10 <sup>3</sup> ksi	205 GPa
Modulus of Rigidity (G)	11.3 x 10 <sup>3</sup> ksi	77.6 GPa
Coefficient of Expansion	8.1 µin/in-°F (70-1000°F)	14.5 µm/m-°C (20-538°C)
Electrical Resistivity	45.4 µohm-in	17.87 µohm-cm
Thermal Conductivity	63 Btu-in./ft <sup>2</sup> hr-°F	9.2 W/m-°C

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	Per Specifications	110-135 ksi	-300°F to 2200°F (-184°C to 1205°C)
Spring Temper	None	200 ksi min	-300°F to 2200°F (-184°C to 1205°C)

Hastelloy® is a registered trademark of Haynes International, Inc.

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