

Hastelloy® alloy X

UNS N06002
W. Nr 2.4665

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.

Applications include: combustion chambers, gas turbine engine components such as honeycomb seals, compressor vanes and combustor cases.

Industries supplied include: Aerospace, industrial furnaces, petrochemical, and 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			
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	balance

Physical Properties

	At 70°F	At 20°C
Density	0.297 lb/in ³	8.22 g/cm ³
Modulus of Elasticity (E)	29.8 x 10 ³ ksi	205 GPa
Modulus of Rigidity (G)	11.3 x 10 ³ ksi	77.6 GPa
Coefficient of Expansion	8.1 microinches/in.-°F (70-1000°F)	14.5 µm/m-°C (20-538°C)
Electrical Resistivity	46.6 µ ohm.in	118.36 µ ohm.cm
Thermal Conductivity	63 Btu-in./ft. ² hr.-°F	9.1 W/m-K

Applicable Specifications

Strip and Foil	AMS 5536
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Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2125°F (1163°C)	105 ksi (MPa) min	-300°F to 2200°F (-184°C to 1205°C)

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