Elgiloy Specialty Metals – Wire Products

Haynes® 242® alloy

UNS N10242

Applicable Specifications

Wire & Bar	ASTM B434 (chemistry only)

Description: HAYNES® 242® alloy is an age-hardenable nickel-molybdenum chromium alloy which can be strengthened through an ordering reaction upon aging, while maintaining high ductility. The alloy's tensile and creep strength properties up to 1300°F (705°C) are considerably improved compared to solid solution strengthened alloys. The coefficient of thermal expansion for 242® alloy are also lower than most other alloys, and it has very good oxidation resistance up to 1500°F (815°C). Other notable characteristics include excellent low cycle fatigue properties and resistance to high-temperature fluorine rich environments.

Applications include: Seal rings, Containment rings, Duct segments, Casings, Fasteners, Nozzles, Pumps, Fluoroelastomer process equipment, HF acid processing equipment, Springs

Industries supplied include: Aerospace, Industrial Heat Treating, Power Generation, Chemical Processing

Nominal Composition

	C	Mn	Si	P	S	B	Ni	Cr	Co	Mo	La	W	Al	Fe
min	0.05	0.30	0.25	-	-	-	Bal	20.00	-	1.00	0.005	13.00	-	-
max	0.15	1.00	0.75	0.030	0.015	0.015	-	24.00	5.00	3.00	0.05	15.00	0.50	3.00

Physical Properties

	At 70°F	At 20°C
Density	0.327 lb/in^3	9.05 g/cm^3
Modulus of Elasticity (E)	33.2 x 10^3 ksi	229 GPa
Coefficient of Expansion	8.3 µin/in-°F (70-1800°F)	15.0 µm/m-°C (25-1000°C)
Electrical Resistivity	48.0 µohm-in	122.0 µohm-cm
Thermal Conductivity	75.7 Btu-in/ft^2-hr-°F	11.3 W/m-°C

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1900-2050°F (1040-1120°C)	110-140 ksi (758-965 MPa)	Up to 1500°F (815°C)
Aged	1200°F (650°C) 24-48 hours	170 ksi min (1172 MPa)	Up to 1200°F (650°C)

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REV 2024 04 02

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