

## Haynes® 242® Alloy

UNS N10242  
W. Nr N/A

Haynes® 242® alloy is an age hardenable nickel-chromium-molybdenum alloy that combines high temperature strength, low thermal expansion, and good oxidation resistance. It derives its strength from a long range ordering reaction upon aging.

Industries served: aerospace, nuclear fuel processing, chemical processing.

Applications include: seal rings, containment rings, rocket nozzles, pumps, high temperature fluoride bearing environments.

### Nominal Composition

	C	Mn	Si	P	S	Cr	Co	Mo	Al	Fe	Cu	B	Ni
min	-	-	-	-	-	7.00	-	24.00	-	-	-	-	
max	0.03	0.80	0.80	0.030	0.015	9.00	1.00	26.00	0.50	2.00	0.50	0.00	BAL

### Physical Properties

	At 70°F	At 20°C
<b>Density</b>	0.327 lb/in <sup>3</sup>	9.05 g/cm <sup>3</sup>
<b>Modulus of Elasticity (E)</b>	33.2 x 10 <sup>3</sup> ksi	229 GPa
<b>Coefficient of Expansion</b>	6.8 microinches/in.-°F (70-1000°F)	12.2 µm/m-°C (20-538°C)
<b>Electrical Resistivity</b>	48.0 µ ohm.in	122.0 µ ohm.cm
<b>Thermal Conductivity</b>	75.7 Btu-in./ft. <sup>2</sup> hr.-°F	11.3 W/m-K

### Applicable Specifications

Strip	ASTM B434
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### Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
<b>Annealed</b>	1900-2050°F (925-1120°C)	105 ksi (725MPa) min	-300°F to 1800°F (-184°C to 982°C)
<b>Annealed and Aged</b>	1200°F, 24h	187 ksi (1288 MPA) typ	-300°F to 1800°F (-184°C to 982°C)

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