



Specialty Metals – Strip Products

Haynes® HR-120®

UNS N08120
W. Nr N/A

Haynes® HR-120® alloy is a solid solution strengthened heat resistant alloy that provides excellent strength at elevated temperature combined with very good resistance to carburizing and sulfidizing environments. Its oxidation resistance is comparable to other widely used Fe-Ni-Cr materials but its strength at temperatures up to 2200°F is significantly higher. The alloy can be readily cold or hot formed and is commonly welded using Haynes 556® filler wire. Applications include: Heat treat furnaces and fixtures, incinerators, radiant tubes, recuperators, fluidized bed components.

Nominal Composition

	C	Mn	Si	P	S	Cr	Co	Mo	Al	Fe	Cu	W	Ni
min	0.02	-	-	-	-	23.00	-	-	-	-	-	-	35.00
max	0.10	1.50	1.00	0.040	0.030	27.00	3.00	2.50	0.40	Bal	0.50	2.50	39.00

Physical Properties

	At 70°F	At 20°C
Density	0.291 lb/in ³	8.07 g/cm ³
Modulus of Elasticity (E)	28.6 x 10 ³ ksi	197 GPa
Coefficient of Expansion	9.0 microinches/in.-°F (70-1000°F)	16.1 μm/m-°C (20-538°C)
Electrical Resistivity	41.1 μ ohm.in	105.2 μ ohm.cm
Thermal Conductivity	78 Btu-in./ft. ² hr.-°F	11.4 W/m-K

Applicable Specifications

Strip	ASTM B409
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Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2150-2210°F (1177-1210°C)	90 ksi (621MPa) min	-300°F to 2200°F (-184°C to 1200°C)

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