

Elgiloy Specialty Metals Material Datasheet

HAYNES® HR-224™ Alloy

UNS: N/A
W.Nr: N/A

Description: HAYNES® HR-224™ alloy is a Ni-Fe-Cr-Al alloy with excellent oxidation resistance and improved fabricability & weldability compared to HAYNES® 214® alloy. The alloy obtains its oxidation resistance via the formation of a protective alumina layer. It exhibits excellent formability characteristics with weldability comparable to nickel-iron-chromium alloys with reduced aluminum contents.

Applications include: Heat recuperators, Automotive catalytic converters and Heat shields, Strand annealing furnace tubes, Fuel cells, Gas separation units

Industries supplied include: Automotive, Industrial Heat Treating, Chemical Processing

Nominal Composition

	C	Ni	Co	Fe	Cr	Mo	Al	Si	W	Mn	Nb (Cb)	Ti	B	Zr
min	.03	BAL		25.00	19.00		3.10	0.30		0.20		0.20		
max	.07	-	2.00	30.00	23.00	0.50	3.90	0.50	0.50	0.50	0.15	0.50	0.004	0.025

Physical Properties

	At 70°F	At 20°C
Density	0.280 lb/in ³	7.72 g/cm ³
Modulus of Elasticity (E)	28.5 x 10 ³ ksi	197 GPa
Coefficient of Expansion	8.3 microinches/in.-°F (1200°F)	14.8 µm/m-°C (600°C)
Electrical Resistivity	48.6 µohm-in	123.5 µohm-cm
Thermal Conductivity	69 Btu-in./ft. ² hr.-°F	10.0 W/m-K

Applicable Specifications

Strip	N/A
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Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2025-2075°F (1107-1135°C)	100 ksi (690 MPa)	70°F to 2000°F (20°C to 1093°C)

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