



# Elgiloy Specialty Metals – Wire Products

## Haynes® HR-120® alloy

UNS N08120  
W. Nr 2.4854

### Applicable Specifications

Wire & Bar    ASTM B408

**Description:** 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. HR-120® also has excellent resistance to hot corrosion in molten salt environments used for parts heat treating. The alloy can be readily cold or hot formed and is commonly welded using Haynes 556® filler wire and MULTIMET® electrodes.

**Applications include:** Heat treatment baskets, Wire mesh belts, Heat treating fixtures, Basket liners, Muffles/retorts, Recuperators, Fluidized bed components, Waste incinerators, Turbine engine parts

**Industries supplied include:** Industrial Heat Treating, Chemical/Waste Processing, Food Processing

### Nominal Composition

	C	Mn	Si	B	Ni	Cr	Co	Mo	Nb (Cb)	W	N	Al	Fe
min	0.03	-	-	-	35.00	23.00	-	-	0.40	-	0.15	-	33 Bal
max	0.10	1.5	0.03	0.01	39.00	27.00	3.00	2.50	0.90	2.50	0.30	0.40	-

### Physical Properties

	At 70°F	At 20°C
Density	0.291 lb/in <sup>3</sup>	8.07 g/cm <sup>3</sup>
Modulus of Elasticity (E)	28.7 x 10 <sup>3</sup> ksi	198 GPa
Modulus of Rigidity (G)	11.0 x 10 <sup>3</sup> ksi	76 GPa
Coefficient of Expansion	9.87 µin/in-°F (70-1800°F)	17.8 µm/m-°C (25-1000°C)
Electrical Resistivity	41.4 µohm-in	105.2 µohm-cm
Thermal Conductivity	83 Btu-in/ft <sup>2</sup> -hr-°F	12.0 W/m-°C

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2048-2246°F (1120-1230°C)	110-140 ksi (758-965 MPa)	Up to 2200°F (1205°C)

Haynes®, HR-120®, and MULTIMET® are registered trademarks of Haynes International, Inc.

#### Limitation of Liability and Disclaimer of Warranty:

- The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.
- Applications may be discussed, however, Elgiloy Specialty Metals, a Division of Combined Metals of Chicago L.L.C., does not recommend or endorse any material for any particular end use or application.
- The data included in this data sheet are typical values and may vary.
- Elgiloy Specialty Metals, a Division of Combined Metals of Chicago L.L.C., makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.
- In no event will Elgiloy Specialty Metals, a Division of Combined Metals of Chicago L.L.C., be liable for any damages whatsoever arising from the use of the information included in the data sheets.

For further information:  
Email: [wireinquiries@elgiloy.com](mailto:wireinquiries@elgiloy.com)  
Phone: 1-847-695-1900

Elgiloy Specialty Metals – Wire Products  
356 North Cross Street  
Sycamore, IL 60178 USA

[www.elgiloy.com](http://www.elgiloy.com)

Rev Date: 6/17/2020