

California Fine Wire Nickel Alloy 120 Nickel Iron Resistance Wire

Category : Metal , Electronic/Magnetic Alloy , Nonferrous Metal , Nickel Alloy

Material Notes:

All values may vary dependent on specific design and usage Capabilities: WireRibbonSquareInsulatedPlated Information provided by California Fine Wire.

Order this product through the following link:

http://www.lookpolymers.com/polymer_California-Fine-Wire-Nickel-Alloy-120-Nickel-Iron-Resistance-Wire.php

Physical Properties	Metric	English	Comments
Density	8.44 g/cc	0.305 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	483 MPa	70000 psi	Annealed
	1030 MPa	150000 psi	Hard

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 $\mu\text{m}/\text{m}\cdot\text{C}$	8.33 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Specific Heat Capacity	0.523 J/g- $^{\circ}\text{C}$	0.125 BTU/lb- $^{\circ}\text{F}$	
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Thermal Conductivity	28.9 W/m-K	201 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	1425 $^{\circ}\text{C}$	2597 $^{\circ}\text{F}$	
Maximum Service Temperature, Air	1099 $^{\circ}\text{C}$	2010 $^{\circ}\text{F}$	Operating Temperature

Component Elements Properties	Metric	English	Comments
Iron, Fe	30 %	30 %	
Nickel, Ni	70 %	70 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000199 ohm-cm	0.0000199 ohm-cm	3% tolerance on sizes below 0.02, 5% tolerance on sizes above 0.02

Descriptive Properties	Value	Comments
Magnetic	Strong	

Temperature Coefficient of Resistance Descriptive Properties	0.0045 ohms/ohm- °C Value	0- 100°C Comments
Thermal EMF vs. Copper	-0.04	

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