

Special Metals MONEL® 404 Copper-Nickel Alloy

Category : Metal , Nonferrous Metal , Nickel Alloy

Material Notes:

Data provided by California Fine Wire and the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-MONEL-404-Copper-Nickel-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.91 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	483 MPa	70000 psi	Annealed
	655 MPa	95000 psi	Stress relieved
	758 MPa	110000 psi	Hard
Tensile Strength, Yield	172 MPa	25000 psi	Annealed
	517 MPa	75000 psi	Stress relieved
	689 MPa	100000 psi	Hard
Modulus of Elasticity	169 GPa	24500 ksi	
Poissons Ratio	0.295	0.295	
Shear Modulus	65.0 GPa	9430 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	13.3 Åµm/m-Å°C	7.39 Åµin/in-Å°F	Mean
	@Temperature 21.0 - 93.0 Å°C	@Temperature 69.8 - 199 Å°F	
	15.3 Åµm/m-Å°C	8.50 Åµin/in-Å°F	Mean
	@Temperature 21.0 - 300 Å°C	@Temperature 69.8 - 572 Å°F	
16.6 Åµm/m-Å°C	9.22 Åµin/in-Å°F	Mean	
@Temperature 21.0 - 538 Å°C	@Temperature 69.8 - 1000 Å°F		
17.6 Åµm/m-Å°C	9.78 Åµin/in-Å°F	Mean	
@Temperature 21.0 - 815 Å°C	@Temperature 69.8 - 1500 Å°F		

Specific Heat Capacity Thermal Properties	0.414 J/g-Â°C Metric	0.0989 BTU/lb-Â°F English	Comments
Melting Point	1300 Â°C	2370 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.050 %	<= 0.050 %	
Carbon, C	<= 0.15 %	<= 0.15 %	
Copper, Cu	<= 45.5 %	<= 45.5 %	As remainder
Iron, Fe	<= 0.50 %	<= 0.50 %	
Manganese, Mn	<= 0.10 %	<= 0.10 %	
Nickel, Ni	52 - 57 %	52 - 57 %	Including Cobalt
Silicon, Si	<= 0.10 %	<= 0.10 %	
Sulfur, S	0.024 %	0.024 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000500 ohm-cm	0.0000500 ohm-cm	
Magnetic Permeability	1.0017	1.0017	200 Oersted; Annealed and Furnace-cooled
	1.0047	1.0047	at 200 Oersted; As-Forged
Curie Temperature	<= -85.0 Â°C	<= -121 Â°F	As-Forged
	<= -79.0 Â°C	<= -110 Â°F	Annealed and Furnace-cooled

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