

Resistalloy International Resistalloy 3718 Nickel Chromium Electrical Resistance Alloy

Category : Metal , Electronic/Magnetic Alloy , Nonferrous Metal , Nickel Alloy , Superalloy , Iron Base

Material Notes:

Used mainly for electrical elements in both industrial and domestic applications. Industrial applications vary from small laboratory kilns to heavy-duty heat-treatment furnaces under all types of atmospheres. Available as wire, bar, and strip. Non-magnetic. Information provided by Resistalloy International Limited.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Resistalloy-International-Resistalloy-3718-Nickel-Chromium-Electrical-Resistance-Alloy.php

Physical Properties	Metric	English	Comments
Density	7.90 g/cc	0.285 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	180	180	
Tensile Strength, Ultimate	750 MPa	109000 psi	
	100 MPa	14500 psi	
	@Temperature 900 °C	@Temperature 1650 °F	
Tensile Strength, Yield	450 MPa	65300 psi	
Elongation at Break	25 - 30 %	25 - 30 %	50 mm (2 in)

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 μm/m-°C	8.89 μin/in-°F	
	@Temperature 20.0 - 250 °C	@Temperature 68.0 - 482 °F	
	17.0 μm/m-°C	9.44 μin/in-°F	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	19.0 μm/m-°C	10.6 μin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	
Thermal Conductivity	13.0 W/m-K	90.2 BTU-in/hr-ft ² -°F	
Melting Point	1390 °C	2530 °F	

Maximum Service Temperature, Air Thermal Properties	1100 °C Metric	2010 °F English	Comments
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Optical Properties	Metric	English	Comments
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Emissivity (0-1)	0.88	0.88	Fully Oxidized
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Component Elements Properties	Metric	English	Comments
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Chromium, Cr	20 %	20 %	
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Iron, Fe	45 %	45 %	
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Nickel, Ni	35 %	35 %	
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Electrical Properties	Metric	English	Comments
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Electrical Resistivity	0.000104 ohm-cm	0.000104 ohm-cm	Temperature Factor is 1.21 at 800°C (1470°F). Temperature Factor is 1.23 at 1000°C (1830°F).
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