Special Metals DURANICKELÂ® 301 (UNS N03301) Annealed Rod and Bar

Category : Metal , Nonferrous Metal , Nickel Alloy

Material Notes:

Tensile strength (ultimate and yield), compressive strength, hardness, and elongation values reported here are typical for Annealed Rod and Bar specifically. Other property values are typical of annealed DURANICKELÂ® alloy 301 or the alloy in general.Data provided by the manufacturer, Special Metals.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Special-Metals-DURANICKEL-301-UNS-N03301-Annealed-Rod-and-Bar.php

Physical Properties	Metric	English	Comments
Density	8.19 g/cc	0.296 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	135 - 185	135 - 185	3000 kg
Hardness, Rockwell B	75 - 90	75 - 90	
Tensile Strength, Ultimate	621 - 827 MPa	90000 - 120000 psi	
Tensile Strength, Yield	207 - 414 MPa @Strain 0.200 %	30000 - 60000 psi @Strain 0.200 %	
Elongation at Break	35 - 55 %	35 - 55 %	
Modulus of Elasticity	207 GPa	30000 ksi	Tension
Compressive Yield Strength	362 MPa	52500 psi	(0.2% Offset)
Poissons Ratio	0.31	0.31	
Shear Modulus	76.0 GPa	11000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 Âµm/m-Â°C @Temperature 21.0 - 100 Â°C	7.22 Âµin/in-Â°F @Temperature 69.8 - 212 Â°F	Mean; aged
	14.0 Âµm/m-Â°C @Temperature 21.0 - 300 Â°C	7.78 Âµin/in-Â°F @Temperature 69.8 - 572 Â°F	Mean; aged
	14.7 Âµm/m-Â°C @Temperature 21.0 - 500 Â°C	8.17 Âµin/in-Â°F @Temperature 69.8 - 932 Â°F	Mean; aged

Thermal Properties	Metric	English	Comments
	16.6 Âµm/m-Â°C @Temperature 21.0 - 900 Â°C	9.22 Âµin/in-Â°F @Temperature 69.8 - 1650 Â°F	Mean, aged
Specific Heat Capacity	0.435 J/g-Â°C @Temperature 20.0 - 100 Â°C	0.104 BTU/lb-Â°F @Temperature 68.0 - 212 Â°F	
Thermal Conductivity	23.8 W/m-K	165 BTU-in/hr-ftÂ²-Â°F	Age Hardened
Melting Point	1400 - 1440 Â°C	2550 - 2620 Â°F	
Solidus	1400 Â°C	2550 Â°F	
Liquidus	1440 Â°C	2620 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	4.0 - 4.75 %	4.0 - 4.75 %	
Carbon, C	<= 0.30 %	<= 0.30 %	
Copper, Cu	<= 0.25 %	<= 0.25 %	
Iron, Fe	<= 0.60 %	<= 0.60 %	
Manganese, Mn	<= 0.50 %	<= 0.50 %	
Nickel, Ni	>= 93 %	>= 93 %	Including Cobalt
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	
Titanium, Ti	0.25 - 1.0 %	0.25 - 1.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000424 ohm-cm	0.0000424 ohm-cm	Aged
Magnetic Permeability	4.28	4.28	Annealed Strip at 200 Oersted (15.9 kA/m)
Curie Temperature	15.0 - 50.0 Â°C	59.0 - 122 Â°F	

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