

Special Metals INCONEL® Alloy 601

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A nickel-chromium alloy with an addition of aluminum for outstanding resistance to oxidation and other forms of high-temperature corrosion. It also has high mechanical properties at elevated temperatures. Used for industrial furnaces; heat-treating equipment such as baskets, muffles, and retorts; petrochemical and other process equipment; and gas-turbine components. Standard product forms are round, flats, forging stock, pipe, tube, plate, sheet, strip, and wire. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCONEL-Alloy-601.php

Physical Properties	Metric	English	Comments
Density	8.11 g/cc	0.293 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	620 MPa	89900 psi	Solution Annealed prior to test
	@Temperature 550 Å°C	@Temperature 1020 Å°F	
Tensile Strength, Yield	760 MPa	110000 psi	Solution Annealed. Value at room temperature
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Tensile Strength, Yield	450 MPa	65300 psi	Solution Annealed. Value at room temperature
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	330 MPa	47900 psi	Solution Annealed prior to test
	@Strain 0.200 %, Temperature 550 Å°C	@Strain 0.200 %, Temperature 1020 Å°F	
Elongation at Break	42 %	42 %	Solution Annealed
	32 %	32 %	
	@Temperature 550 Å°C	@Temperature 1020 Å°F	Solution Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	13.75 Åµm/m-Å°C	7.639 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Specific Heat Capacity	0.448 J/g-Å°C	0.107 BTU/lb-Å°F	
Thermal Conductivity	11.2 W/m-K	77.7 BTU-in/hr-ftÅ²-Å°F	

Thermal Properties	Metric	English	Comments
Melting Point	1360 - 1411 Å°C	2480 - 2572 Å°F	
Solidus	1360 Å°C	2480 Å°F	
Liquidus	1411 Å°C	2572 Å°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.0 - 1.7 %	1.0 - 1.7 %	
Carbon, C	<= 0.10 %	<= 0.10 %	
Chromium, Cr	21 - 25 %	21 - 25 %	
Copper, Cu	<= 1.0 %	<= 1.0 %	
Iron, Fe	13 %	13 %	As remainder
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Nickel, Ni	58 - 63 %	58 - 63 %	
Silicon, Si	<= 0.50 %	<= 0.50 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000119 ohm-cm	0.000119 ohm-cm	
Magnetic Permeability	1.003	1.003	at 200 oersted (15.9 kA/m)
Curie Temperature	<= -196 Å°C	<= -321 Å°F	

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