

Special Metals INCOLOY® Alloy 800

Category : Metal , Superalloy , Iron Base

Material Notes:

A nickel-iron-chromium alloy with good strength and excellent resistance to oxidation and carburization in high-temperature atmospheres. It also resists corrosion by many aqueous environments. The alloy maintains a stable, austenitic structure during prolonged exposure to high temperatures. Used for process piping, heat exchangers, carburizing equipment, heating-element sheathing, and nuclear steam-generator tubing. 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-INCOLOY-Alloy-800.php

Physical Properties	Metric	English	Comments
Density	7.94 g/cc	0.287 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	600 MPa	87000 psi	Annealed
	500 MPa @Temperature 550 Â°C	72500 psi @Temperature 1020 Â°F	Annealed prior to test
Tensile Strength, Yield	275 MPa	39900 psi	Annealed
	213 MPa @Temperature 550 Â°C	30900 psi @Temperature 1020 Â°F	Annealed prior to test
Elongation at Break	45 %	45 %	Annealed prior to test.
	35 % @Temperature 550 Â°C	35 % @Temperature 1020 Â°F	Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	14.4 Âµm/m-Â°C	8.00 Âµin/in-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
Specific Heat Capacity	0.460 J/g-Â°C	0.110 BTU/lb-Â°F	
Thermal Conductivity	11.5 W/m-K	79.8 BTU-in/hr-ftÂ²-Â°F	
Melting Point	1357 - 1385 Â°C	2475 - 2525 Â°F	

Thermal Properties	Metric °C	English °F	Comments
Liquidus	1385 Â°C	2525 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.15 - 0.60 %	0.15 - 0.60 %	
Carbon, C	<= 0.10 %	<= 0.10 %	
Chromium, Cr	19 - 23 %	19 - 23 %	
Copper, Cu	<= 0.75 %	<= 0.75 %	
Iron, Fe	>= 39.5 %	>= 39.5 %	
Manganese, Mn	<= 1.5 %	<= 1.5 %	
Nickel, Ni	30 - 35 %	30 - 35 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Titanium, Ti	0.15 - 0.60 %	0.15 - 0.60 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000989 ohm-cm	0.0000989 ohm-cm	
Magnetic Permeability	1.014	1.014	at 200 oersted (15.9 kA/m)
Curie Temperature	-115 Â°C	-175 Â°F	

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