

Special Metals INCOLOY® Alloy 330

Category : Metal , Superalloy , Iron Base

Material Notes:

A nickel-iron-chromium alloy with an addition of silicon for enhanced oxidation resistance. It has good strength at high temperatures and excellent resistance to carburizing and oxidizing atmospheres. The alloy's austenitic microstructure remains stable during long-time exposure to high temperature. Used in industrial heating for furnace muffles, retorts, and conveyor systems and for heat-treating baskets and fixtures. Standard product forms are round, flats, forging stock, 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-330.php

Physical Properties	Metric	English	Comments
Density	8.08 g/cc	0.292 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	600 MPa	87000 psi	Annealed prior to test
	480 MPa @Temperature 550 Â°C	69600 psi @Temperature 1020 Â°F	Annealed prior to test
Tensile Strength, Yield	280 MPa @Strain 0.200 %	40600 psi @Strain 0.200 %	Annealed prior to test
	170 MPa @Strain 0.200 %, Temperature 550 Â°C	24700 psi @Strain 0.200 %, Temperature 1020 Â°F	Annealed prior to test
Elongation at Break	45 %	45 %	Annealed prior to test.
	45 % @Temperature 550 Â°C	45 % @Temperature 1020 Â°F	Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	14.9 Âµm/m-Â°C	8.28 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	12.4 W/m-K	86.1 BTU-in/hr-ftÂ²- Â°F	

Melting Point Thermal Properties	1345 - 1425 Å°C Metric	2453 - 2597 Å°F English	Comments
Solidus	1345 Å°C	2453 Å°F	
Liquidus	1425 Å°C	2597 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	17 - 20 %	17 - 20 %	
Iron, Fe	43 %	43 %	As remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Nickel, Ni	34 - 37 %	34 - 37 %	
Phosphorous, P	0.030 %	0.030 %	
Silicon, Si	0.75 - 1.5 %	0.75 - 1.5 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0001017 ohm-cm	0.0001017 ohm-cm	
Magnetic Permeability	1.02	1.02	at 200 oersted (15.9 kA/m)

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