

Special Metals INCOLOY® Alloy 020

Category : Metal , Superalloy , Iron Base

Material Notes:

A nickel-iron-chromium alloy with additions of copper and molybdenum. It also contains niobium for stabilization against sensitization and resultant intergranular corrosion. The alloy has excellent resistance to general corrosion, pitting, and crevice corrosion in chemicals containing chlorides and sulfuric, phosphoric, and nitric acids. Used for tanks, piping, heat exchangers, pumps, valves, and other process equipment. Standard product forms are round, flats, 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-020.php

Physical Properties	Metric	English	Comments
Density	8.05 g/cc	0.291 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	620 MPa	89900 psi	Annealed prior to test
	540 MPa @Temperature 550 °C	78300 psi @Temperature 1020 °F	Annealed prior to test
Tensile Strength, Yield	300 MPa @Strain 0.200 %	43500 psi @Strain 0.200 %	Annealed prior to test
	210 MPa @Strain 0.200 %, Temperature 550 °C	30500 psi @Strain 0.200 %, Temperature 1020 °F	Annealed prior to test
Elongation at Break	41 %	41 %	Annealed prior to test.
	40 % @Temperature 550 °C	40 % @Temperature 1020 °F	Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	14.7 µm/m-°C	8.17 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	
Thermal Conductivity	12.3 W/m-K	85.4 BTU-in/hr-ft ² -°F	

Component Elements Properties	Metric	English	Comments
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Component Elements Properties	Metric	English	Comments
Chromium, Cr	19 - 21 %	19 - 21 %	
Copper, Cu	3.0 - 4.0 %	3.0 - 4.0 %	
Iron, Fe	35 %	35 %	As remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	2.0 - 3.0 %	2.0 - 3.0 %	
Nickel, Ni	32 - 38 %	32 - 38 %	
Niobium, Nb (Columbium, Cb)	<= 1.0 %	<= 1.0 %	Nb min. is 8xC.
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.035 %	<= 0.035 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000108 ohm-cm	0.000108 ohm-cm	

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