

Special Metals INCONEL® Alloy G-3

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A nickel-chromium-iron alloy with additions of molybdenum and copper. It has good weldability and resistance to intergranular corrosion in the welded condition. The low carbon content helps prevent sensitization and consequent intergranular corrosion of weld heat-affected zones. Use for flue-gas scrubbers and for handling phosphoric and sulfuric acids. Standard product forms are round, plate, sheet, strip, pipe, tube, 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-G-3.php

Physical Properties	Metric	English	Comments
Density	8.14 g/cc	0.294 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	500 MPa	72500 psi	Solution Annealed prior to test
	@Temperature 550 Å°C	@Temperature 1020 Å°F	
Tensile Strength, Yield	690 MPa	100000 psi	Solution Annealed. Value at room temperature
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Tensile Strength, Yield	320 MPa	46400 psi	Solution Annealed prior to test
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	190 MPa	27600 psi	Solution Annealed prior to test
	@Strain 0.200 %, Temperature 550 Å°C	@Strain 0.200 %, Temperature 1020 Å°F	
Elongation at Break	60 %	60 %	Solution Annealed
	65 %	65 %	
	@Temperature 550 Å°C	@Temperature 1020 Å°F	Solution Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	14.6 Åµm/m-Å°C	8.11 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Specific Heat Capacity	0.452 J/g-Å°C	0.108 BTU/lb-Å°F	
Thermal Conductivity	10.0 W/m-K	69.4 BTU-in/hr-ftÅ²-Å°F	

Thermal Properties	Metric	English	Comments
Melting Point	1260 - 1340 Å°C	2300 - 2440 Å°F	
Solidus	1260 Å°C	2300 Å°F	
Liquidus	1340 Å°C	2440 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.015 %	<= 0.015 %	
Chromium, Cr	21 - 23.5 %	21 - 23.5 %	
Cobalt, Co	<= 5.0 %	<= 5.0 %	
Copper, Cu	1.5 - 2.5 %	1.5 - 2.5 %	
Iron, Fe	18 - 21 %	18 - 21 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	6.0 - 8.0 %	6.0 - 8.0 %	
Nickel, Ni	40 %	40 %	As remainder
Niobium, Nb (Columbium, Cb)	<= 0.50 %	<= 0.50 %	Includes Ta
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	
Tungsten, W	<= 1.5 %	<= 1.5 %	

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