

Special Metals NIMONIC® Alloy 901

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A nickel-iron-chromium alloy containing titanium and aluminum for precipitation hardening and molybdenum for solid-solution strengthening. The alloy has high yield strength and creep resistance at temperatures to about 1110Å°F (600Å°C). A substantial iron content enables the alloy to combine high strength with good forging characteristics. Used in gas turbines for discs and shafts. Standard product form is round. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-NIMONIC-Alloy-901.php

Physical Properties	Metric	English	Comments
Density	8.14 g/cc	0.294 lb/inÅ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1030 MPa	149000 psi	Precipitation Hardened prior to test
	@Temperature 550 Å°C	@Temperature 1020 Å°F	
Tensile Strength, Yield	1200 MPa	174000 psi	Precipitation Hardened. Value at room temperature
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Elongation at Break	875 MPa	127000 psi	Precipitation Hardened prior to test
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	800 MPa	116000 psi	Precipitation Hardened prior to test.
	@Strain 0.200 %, Temperature 550 Å°C	@Strain 0.200 %, Temperature 1020 Å°F	
Elongation at Break	15 %	15 %	Precipitation Hardened
	10 %	10 %	
	@Temperature 550 Å°C	@Temperature 1020 Å°F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.5 Åµm/m-Å°C	7.50 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Specific Heat Capacity	0.431 J/g-Å°C	0.103 BTU/lb-Å°F	
Melting Point	1280 - 1345 Å°C	2340 - 2453 Å°F	

Thermal Properties	Metric	English	Comments
Liquidus	1345 Â°C	2453 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.35 %	<= 0.35 %	
Carbon, C	<= 0.10 %	<= 0.10 %	
Chromium, Cr	11 - 14 %	11 - 14 %	
Cobalt, Co	<= 1.0 %	<= 1.0 %	
Copper, Cu	<= 0.50 %	<= 0.50 %	
Iron, Fe	33 %	33 %	As remainder
Manganese, Mn	<= 0.50 %	<= 0.50 %	
Molybdenum, Mo	5.0 - 6.5 %	5.0 - 6.5 %	
Nickel, Ni	40 - 45 %	40 - 45 %	Including Cobalt
Silicon, Si	<= 0.40 %	<= 0.40 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	
Titanium, Ti	2.8 - 3.1 %	2.8 - 3.1 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000112 ohm-cm	0.000112 ohm-cm	
Magnetic Permeability	1.013	1.013	at 200 oersted (15.9 kA/m)

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