

Special Metals NIMONIC® Alloy 105

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A precipitation-hardenable nickel-cobalt-chromium alloy with an addition of molybdenum for solid-solution strengthening. The relatively high aluminum content enhances both strength (through greater precipitation hardening) and oxidation resistance. The alloy has high creep-rupture properties at temperatures to about 1740°F (950°C). Used in gas turbines for blades, discs, and shafts. Standard product forms are round and extruded section. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-NIMONIC-Alloy-105.php

Physical Properties	Metric	English	Comments
Density	8.01 g/cc	0.289 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1030 MPa	149000 psi	Precipitation Hardened prior to test
	@Temperature 650 °C	@Temperature 1200 °F	
Tensile Strength, Yield	1150 MPa	167000 psi	Precipitation Hardened. Value at room temperature
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Strength, Yield	770 MPa	112000 psi	Precipitation Hardened. Value at room temperature
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	720 MPa	104000 psi	Precipitation Hardened prior to test
	@Strain 0.200 %, Temperature 650 °C	@Strain 0.200 %, Temperature 1200 °F	
Elongation at Break	25 %	25 %	Precipitation Hardened
	30 %	30 %	
	@Temperature 650 °C	@Temperature 1200 °F	Precipitation Hardened prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	12.2 µm/m-°C	6.78 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
Specific Heat Capacity	0.419 J/g-°C	0.100 BTU/lb-°F	
Thermal Conductivity	10.89 W/m-K	75.58 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric	English	Comments
Melting Point	1290 - 1345 Å°C	2350 - 2453 Å°F	
Solidus	1290 Å°C	2350 Å°F	
Liquidus	1345 Å°C	2453 Å°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	4.5 - 4.9 %	4.5 - 4.9 %	
Boron, B	0.0030 - 0.010 %	0.0030 - 0.010 %	
Carbon, C	<= 0.12 %	<= 0.12 %	
Chromium, Cr	14 - 15.7 %	14 - 15.7 %	
Cobalt, Co	18 - 22 %	18 - 22 %	
Copper, Cu	<= 0.20 %	<= 0.20 %	
Iron, Fe	<= 1.0 %	<= 1.0 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	4.5 - 5.5 %	4.5 - 5.5 %	
Nickel, Ni	51 %	51 %	As remainder
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	
Titanium, Ti	0.90 - 1.5 %	0.90 - 1.5 %	
Zirconium, Zr	<= 0.15 %	<= 0.15 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000131 ohm-cm	0.000131 ohm-cm	
Magnetic Permeability	1.0007	1.0007	at 200 oersted (15.9 kA/m)

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China

