Special Metals INCONELÂ® Alloy 718

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Developed in the early 1960's, IN718 is still considered the material of choice for the majority of aircraft engine components with service temperatures below 1200Â°F (650Â°C). Inconel 718 is a precipitation-hardenable nickel-chromium alloy containing also significant amounts of iron, niobium, and molybdenum along with lesser amounts of aluminum and titanium. It combines corrosion resistance and high strength with outstanding weldability including resistance to postweld cracking. The alloy has excellent creep-rupture strength at temperatures to 1300Â°F (700Â°C).Applications: Aerospace, gas turbines, rocket motors, spacecraft, space shuttles, nuclear reactors, pumps, turbo pump seals, and tooling.Forms: round, flat, extruded section, pipe, tube, 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-INCONEL-Alloy-718.php

Physical Properties	Metric	English	Comments
Density	8.19 g/cc	0.296 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1100 MPa @Temperature 650 Â°C	160000 psi @Temperature 1200 Â°F	Precipitation Hardened prior to test
	1375 MPa @Temperature 23.0 Â°C	199400 psi @Temperature 73.4 Â°F	
Tensile Strength, Yield	1100 MPa @Strain 0.200 %	160000 psi @Strain 0.200 %	Precipitation Hardened. Value at room temperature
	980 MPa @Strain 0.200 %, Temperature 650 Â°C	142000 psi @Strain 0.200 %, Temperature 1200 Â°F	Precipitation Hardened prior to test
Elongation at Break	25 %	25 %	Precipitation Hardened
	18 % @Temperature 650 Â°C	18 % @Temperature 1200 Â°F	Precipitation Hardened prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 Âµm/m-Â°C @Temperature 20.0 - 100 Â°C	7.22 Âµin/in-Â°F @Temperature 68.0 - 212 Â°F	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.435 J/g-Â°C	0.104 BTU/lb-Â°F	
Thermal Conductivity	11.4 W/m-K	79.1 BTU-in/hr-ftÂ²-Â°F	
Melting Point	1260 - 1336 Â°C	2300 - 2437 Â°F	
Solidus	1260 Â°C	2300 Â°F	
Liquidus	1336 Â°C	2437 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.20 - 0.80 %	0.20 - 0.80 %	
Boron, B	<= 0.0060 %	<= 0.0060 %	
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	17 - 21 %	17 - 21 %	
Cobalt, Co	<= 1.0 %	<= 1.0 %	
Copper, Cu	<= 0.30 %	<= 0.30 %	
Iron, Fe	17 %	17 %	As remainder
Manganese, Mn	<= 0.35 %	<= 0.35 %	
Molybdenum, Mo	2.8 - 3.3 %	2.8 - 3.3 %	
Nickel, Ni	50 - 55 %	50 - 55 %	includes cobalt
Niobium, Nb (Columbium, Cb)	4.75 - 5.5 %	4.75 - 5.5 %	
Phosphorous, P	<= 0.015 %	<= 0.015 %	
Silicon, Si	<= 0.35 %	<= 0.35 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Titanium, Ti	0.65 - 1.15 %	0.65 - 1.15 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000125 ohm-cm	0.000125 ohm-cm	
Magnetic Permeability	1.0011	1.0011	at 200 oersted (15.9 kA/m)
Curie Temperature	-112 Â°C	-170 Â°F	

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