

Special Metals INCONEL® Alloy MA 754

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A mechanically alloyed nickel-chromium alloy with oxide dispersion strengthening. Mechanical alloying, which involves high-energy milling of metal powders, is used to create a uniformly distributed, fine dispersoid of yttrium oxide in the alloy. The dispersoid, which is stable to the alloy's melting point, imparts exceptional high-temperature strength and creep resistance. The alloy's strength, corrosion resistance, and microstructural stability make it useful for gas-turbine vanes and other extreme-service applications. Standard product forms are round, flats, extruded section, plate, 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-MA-754.php

Physical Properties	Metric	English	Comments
Density	8.30 g/cc	0.300 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	950 MPa	138000 psi	Annealed
	730 MPa @Temperature 550 Â°C	106000 psi @Temperature 1020 Â°F	Annealed prior to test
Tensile Strength, Yield	570 MPa	82700 psi	Annealed
	500 MPa @Temperature 550 Â°C	72500 psi @Temperature 1020 Â°F	Annealed prior to test
Elongation at Break	20 %	20 %	Annealed prior to test.
	18 % @Temperature 550 Â°C	18 % @Temperature 1020 Â°F	Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	12.2 Âµm/m-Â°C	6.78 Âµin/in-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
Thermal Conductivity	14.26 W/m-K	98.96 BTU-in/hr-ft ² - Â°F	
Melting Point	1400 Â°C	2550 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.30 %	0.30 %	
Carbon, C	0.050 %	0.050 %	
Chromium, Cr	20 %	20 %	
Iron, Fe	1.0 %	1.0 %	
Nickel, Ni	78 %	78 %	
Titanium, Ti	0.50 %	0.50 %	
Y2O3	0.60 %	0.60 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0001075 ohm-cm	0.0001075 ohm-cm	
Magnetic Permeability	1.001	1.001	at 200 oersted (15.9 kA/m)

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