

Special Metals INCONEL® 725 Nickel Superalloy (UNS N07725), Annealed Round

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Tensile strength (ultimate and yield), hardness, and elongation values reported here are typical for Annealed Round samples. Other property values are typical of INCONEL® alloy 725. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCONEL-725-Nickel-Superalloy-UNS-N07725-Annealed-Round.php

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

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	5.0	5.0	As reported by manufacturer; below normal HRC range
Tensile Strength, Ultimate	855 MPa	124000 psi	
Tensile Strength, Yield	427 MPa @Strain 0.200 %	62000 psi @Strain 0.200 %	
Elongation at Break	57 %	57 %	
Modulus of Elasticity	204 GPa	29600 ksi	
Poissons Ratio	0.31	0.31	
Shear Modulus	78.0 GPa	11300 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 Åµm/m-Å°C	7.22 Åµin/in-Å°F	Mean
	@Temperature 21.0 - 100 Å°C	@Temperature 69.8 - 212 Å°F	
	13.4 Åµm/m-Å°C	7.44 Åµin/in-Å°F	
	@Temperature 21.0 - 300 Å°C	@Temperature 69.8 - 572 Å°F	Mean
	14.1 Åµm/m-Å°C	7.83 Åµin/in-Å°F	Mean
	@Temperature 21.0 - 500 Å°C	@Temperature 69.8 - 932 Å°F	
Melting Point	1271 - 1343 Å°C	2320 - 2449 Å°F	
Solidus	1271 Å°C	2320 Å°F	

Thermal Properties	Metric	English	Comments
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Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.35 %	<= 0.35 %	
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	19 - 22.5 %	19 - 22.5 %	
Iron, Fe	9.0 %	9.0 %	As remainder
Manganese, Mn	<= 0.35 %	<= 0.35 %	
Molybdenum, Mo	7.0 - 9.5 %	7.0 - 9.5 %	
Nickel, Ni	55 - 59 %	55 - 59 %	
Niobium, Nb (Columbium, Cb)	2.75 - 4.0 %	2.75 - 4.0 %	
Phosphorous, P	<= 0.015 %	<= 0.015 %	
Silicon, Si	<= 0.20 %	<= 0.20 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	
Titanium, Ti	1.0 - 1.7 %	1.0 - 1.7 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000130 ohm-cm	0.000130 ohm-cm	
Magnetic Permeability	<= 1.001	<= 1.001	at 200 Oersted (15.9 kA/m)

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