

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

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Tensile strength (ultimate and yield), hardness, impact, and elongation values reported here are typical for Age Hardened 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-Age-Hardened-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	36	36	Same value for longitudinal and transverse
Tensile Strength, Ultimate	1240 MPa	180000 psi	Same value for longitudinal and transverse
Tensile Strength, Yield	903 MPa	131000 psi	Longitudinal
	@Strain 0.200 %	@Strain 0.200 %	
	917 MPa	133000 psi	Transverse
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	30 %	30 %	
Modulus of Elasticity	204 GPa	29600 ksi	
Poissons Ratio	0.31	0.31	
Shear Modulus	78.0 GPa	11300 ksi	
Charpy Impact	65.0 J	47.9 ft-lb	Longitudinal; Notch status not reported
	88.0 J	64.9 ft-lb	Transverse; Notch status not reported

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	Mean
	@Temperature 21.0 - 300 Å°C	@Temperature 69.8 - 572 Å°F	

Thermal Properties	Metric 14.1 Âµm/m-Â°C	English 7.81 Âµm/in-Â°F	Comments
	@Temperature 21.0 - 500 Â°C	@Temperature 69.8 - 932 Â°F	Mean
Melting Point	1271 - 1343 Â°C	2320 - 2449 Â°F	
Solidus	1271 Â°C	2320 Â°F	
Liquidus	1343 Â°C	2449 Â°F	

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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