

Special Metals INCONEL® 625LCF® Nickel Superalloy (UNS N06626) Annealed 1950°F (1070°C) + Aged 1200°F (650°C)

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Tensile strength (ultimate and yield), elongation, and hardness values are for samples annealed 1950°F (1070°C)/5 minutes/AC + Aged 1200°F (650°C)/100h/AC. This produces ASTM grain size 9.5. Other property values are typical of this alloy. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCONEL-625LCF-Nickel-Superalloy-UNS-N06626-Annealed-1950F-1070C-Aged-1200F-650C.php

Physical Properties	Metric	English	Comments
Density	8.44 g/cc	0.305 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	100	100	
Tensile Strength, Ultimate	1040 MPa	151000 psi	
Tensile Strength, Yield	835.6 MPa @Strain 0.200 %	121200 psi @Strain 0.200 %	
Elongation at Break	31 %	31 %	
Modulus of Elasticity	208 GPa	30200 ksi	
Poissons Ratio	0.28	0.28	
Shear Modulus	81.4 GPa	11800 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	12.8 µm/m-°C	7.11 µin/in-°F	Mean
	@Temperature 21.0 - 100 °C	@Temperature 69.8 - 212 °F	
	13.3 µm/m-°C	7.39 µin/in-°F	Mean
	@Temperature 21.0 - 300 °C	@Temperature 69.8 - 572 °F	
CTE, linear	13.9 µm/m-°C	7.72 µin/in-°F	Mean
	@Temperature 21.0 - 500 °C	@Temperature 69.8 - 932 °F	
CTE, linear	14.9 µm/m-°C	8.28 µin/in-°F	Mean

Thermal Properties	@Temperature 21.0 - Metric 765 °C	@Temperature 69.8 - English 1285 °F	Comments
Specific Heat Capacity	0.410 J/g-°C	0.0980 BTU/lb-°F	
Thermal Conductivity	9.70 W/m-K	67.3 BTU-in/hr-ft ² -°F	
Melting Point	1290 - 1350 °C	2350 - 2460 °F	
Solidus	1290 °C	2350 °F	
Liquidus	1350 °C	2460 °F	
Maximum Service Temperature, Air	650 °C	1200 °F	resistance to low cycle and thermal fatigue

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.40 %	<= 0.40 %	
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	20 - 23 %	20 - 23 %	
Cobalt, Co	<= 1.0 %	<= 1.0 %	
Iron, Fe	<= 5.0 %	<= 5.0 %	
Manganese, Mn	<= 0.50 %	<= 0.50 %	
Molybdenum, Mo	8.0 - 10 %	8.0 - 10 %	
Nickel, Ni	>= 58 %	>= 58 %	
Niobium, Nb (Columbium, Cb)	3.15 - 4.15 %	3.15 - 4.15 %	Includes Ta
Nitrogen, N	<= 0.020 %	<= 0.020 %	
Phosphorous, P	<= 0.015 %	<= 0.015 %	
Silicon, Si	<= 0.020 %	<= 0.020 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Titanium, Ti	<= 0.40 %	<= 0.40 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000132 ohm-cm	0.000132 ohm-cm	
Magnetic Permeability	1.0006	1.0006	at 200 Oersted (15.9 kA/m)

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