

Ceradyne Ceralloy® 147-A Hot Pressed Silicon Nitride (Si3N4)

Category : Ceramic , Nitride

Material Notes:

Ceralloy® 147 Reaction Bonded Silicon Nitride (RBSN) is a high purity grade of silicon nitride. RBSN has excellent thermal shock resistance and outstanding compatibility with non-ferrous molten metals. This lower cost alternative to the fully dense silicon nitride grades can be manufactured to close tolerance without the need for expensive diamond grinding. Features: High Purity Excellent Mechanical Properties Applications: Semiconductor Components Wear Components Information provided by Ceradyne, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Ceradyne-Ceralloy-147-A-Hot-Pressed-Silicon-Nitride-Si3N4.php

Physical Properties	Metric	English	Comments
Density	3.18 g/cc	0.115 lb/in ³	
Porosity	0.00 %	0.00 %	
Weibull Modulus	10 - 20	10 - 20	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1650	1650	HV (0.3); kg/mm ²
Abrasive Hardness	860	860	Abrasive Wear Resistance Parameter
Modulus of Elasticity	310 GPa	45000 ksi	
Flexural Strength	700 MPa	102000 psi	
Poissons Ratio	0.23	0.23	
Fracture Toughness	4.50 MPa-m ^{1/2}	4.10 ksi-in ^{1/2}	
Shear Modulus	126 GPa	18300 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	3.20 µm/m-°C	1.78 µin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Thermal Conductivity	42.0 W/m-K	291 BTU-in/hr-ft ² -°F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	
Dielectric Constant	9.0	9.0	

Descriptive Properties	Value	Comments
Purity, %	>99.4	
Theoretical Density, %	>99.5	
Thermal Shock Parameter, °C	517	

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