

CeramTec 771 94% Alumina (Al₂O₃)

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Te value is 840°C. Hasselman Thermal Shock value is 200 K.Data provided by CeramTec North America.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-771-94-Alumina-Al2O3.php

Physical Properties	Metric	English	Comments
Density	3.60 g/cc	0.130 lb/in ³	
Water Absorption	0.00 %	0.00 %	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1200	1200	HV 0.5
Tensile Strength, Ultimate	138 MPa	20000 psi	ACMA Test #4
Modulus of Elasticity	281 GPa	40800 ksi	Ultrasonic
Flexural Strength	262 MPa	38000 psi	20 x 40 mm
Compressive Strength	1931 MPa	280100 psi	ASTM C773-88
Poissons Ratio	0.24	0.24	ASTM C-1 259-94
Fracture Toughness	2.70 MPa-m ^{1/2}	2.46 ksi-in ^{1/2}	
Shear Modulus	113 GPa	16400 ksi	Ultrasonic

Thermal Properties	Metric	English	Comments
CTE, linear	6.00 μm/m-°C	3.33 μin/in-°F	
	@Temperature 25.0 - 300 °C	@Temperature 77.0 - 572 °F	
	7.20 μm/m-°C	4.00 μin/in-°F	
	@Temperature 25.0 - 700 °C	@Temperature 77.0 - 1290 °F	
	7.40 μm/m-°C	4.11 μin/in-°F	
	@Temperature 25.0 - 1001 °C	@Temperature 77.0 - 1834 °F	
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F	
Thermal Conductivity	27.7 W/m-K	192 BTU-in/hr-ft ² -°F	

Maximum Service Temperature, Air Thermal Properties	1500 °C Metric	2730 °F English	Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	7.00e+6 ohm-cm @Temperature 700 °C	7.00e+6 ohm-cm @Temperature 1290 °F	
	>= 1.00e+14 ohm-cm @Temperature 25.0 °C	>= 1.00e+14 ohm-cm @Temperature 77.0 °F	
Dielectric Constant	8.9 @Frequency 1e+6 Hz	8.9 @Frequency 1e+6 Hz	
Dielectric Strength	8.268 kV/mm @Thickness 6.35 mm	210.0 kV/in @Thickness 0.250 in	
Dissipation Factor	0.00030 @Frequency 1e+6 Hz	0.00030 @Frequency 1e+6 Hz	
	0.0010 @Frequency 1e+10 Hz	0.0010 @Frequency 1e+10 Hz	
Dielectric Loss Index	0.0027	0.0027	1 MHz; 20°C

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