CeramTec AT 79 Alumina, 99.6%

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Aluminas exhibit good mechanical properties such as hardness, compressive and tensile strength, and elastic modulus. They perform well at elevated temperatures.

Order this product through the following link:
http://www.lookpolymers.com/polymer_CeramTec-AT-79-Alumina-996.php

Physical Properties	Metric	English	Comments
Density	3.95 g/cc	0.143 lb/in³	DIN EN 623-2
Water Absorption	0.00 %	0.00 %	Open Porosity; DIN EN 623-2
Permeability	0.00	0.00	%, Gas
Weibull Modulus	14	14	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	2110	2110	HV1; DINV ENV 843-4
Tensile Modulus	390 GPa	56600 ksi	Young's; DINV ENV 843-2
Flexural Strength	470 MPa	68200 psi	DIN EN 843-1
Compressive Strength	4000 MPa	580000 psi	DIN 51067T1
Poissons Ratio	0.23	0.23	DINV ENV 843-2
Fracture Toughness	4.00 MPa-m½	3.64 ksi-in½	K_{IC} (SEVNB); DIN CEN/TS 14425-1
Shear Modulus	159 GPa	23100 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	7.50 µm/m-°C @Temperature 20.0 - 100 °C	4.17 µin/in-°F @Temperature 68.0 - 212 °F	DIN EN 821-1
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F	DINV ENV 821-3
Thermal Conductivity	30.0 W/m-K	208 BTU-in/hr-ft²-°F	DIN EN 821-2
Maximum Service Temperature, Air	1500 °C	2730 °F	
Maximum Service Temperature, Inert	1500 °C	2730 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	99.6 %	99.6 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.00e+8 ohm-cm @Temperature 400 °C	5.00e+8 ohm-cm @Temperature 752 °F	IEC 672-1
	5.00e+14 ohm-cm @Temperature 20.0 °C	5.00e+14 ohm-cm @Temperature 68.0 °F	IEC 672-1
Dielectric Constant	9.0 @Frequency 1.00e+6 Hz	9.0 @Frequency 1.00e+6 Hz	IEC 672-1
Dielectric Strength	18.0 kV/mm	457 kV/in	IEC 672-1
Dielectric Loss Index	0.0050 @Frequency 9.00e+9 Hz	0.0050 @Frequency 9.00e+9 Hz	IEC 672-1

Descriptive Properties	Value	Comments
Ra = Arithmetic Mean Roughness Value (µm)	<0.1	
Thermal Shock Resistance R1 (K)	127	calculated; R1 = [s? (1-µ)] / (a·E)

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