

CeramTec B 601 Alumina, 98.5%

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-B-601-Alumina-985.php

Physical Properties	Metric	English	Comments
Density	3.83 g/cc	0.138 lb/in ³	DIN EN 623-2
Water Absorption	0.00 %	0.00 %	Open Porosity; DIN EN 623-2
Permeability	0.00	0.00	%, Gas
Weibull Modulus	10	10	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1600	1600	HV1; DINV ENV 843-4
Tensile Modulus	320 GPa	46400 ksi	Young's; DINV ENV 843-2
Flexural Strength	390 MPa	56600 psi	DIN EN 843-1
Compressive Strength	2000 MPa	290000 psi	DIN 51067T1
Poissons Ratio	0.22	0.22	DINV ENV 843-2
Fracture Toughness	4.90 MPa-m ^{1/2}	4.46 ksi-in ^{1/2}	K _{IC} (SEVNB); DIN CEN/TS 14425-1
Shear Modulus	131 GPa	19000 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	7.30 μm/m-°C	4.06 μin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	8.70 μm/m-°C	4.83 μin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F	DINV ENV 821-3
Thermal Conductivity	24.0 W/m-K	167 BTU-in/hr-ft ² -°F	DIN EN 821-2
Maximum Service Temperature, Air			

Thermal Properties	1300 °C Metric	2370 °F English	Comments
Maximum Service Temperature, Inert	1300 °C	2370 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	98.5 %	98.5 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+10 ohm-cm	1.00e+10 ohm-cm	IEC 672-1
	@Temperature 400 °C	@Temperature 752 °F	
	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 672-1
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Constant	9.0	9.0	IEC 672-1
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	20.0 kV/mm	508 kV/in	IEC 672-1
Dielectric Loss Index	0.0060	0.0060	IEC 672-1
	@Frequency 9.00e+9 Hz	@Frequency 9.00e+9 Hz	

Descriptive Properties	Value	Comments
Ra = Arithmetic Mean Roughness Value (µm)	<0.2	
Thermal Shock Resistance R1 (K)	101	calculated; $R1 = [s^2 (1-\mu)] / (a \cdot E)$

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