

CeramTec V 38 Alumina, 96.0% Al₂O₃-SiO₂

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-V-38-Alumina-960-Al2O3-SiO2.php

Physical Properties	Metric	English	Comments
Density	3.75 g/cc	0.135 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	13	13	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1620	1620	HV1; DINV ENV 843-4
Tensile Modulus	350 GPa	50800 ksi	Young's; DINV ENV 843-2
Flexural Strength	310 MPa	45000 psi	DIN EN 843-1
Compressive Strength	2500 MPa	363000 psi	DIN 51067T1
Poissons Ratio	0.23	0.23	DINV ENV 843-2
Fracture Toughness	4.00 MPa-m ^{1/2}	3.64 ksi-in ^{1/2}	K _{IC} (SEVNB); DIN CEN/TS 14425-1
Shear Modulus	142 GPa	20600 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	7.60 µm/m-°C	4.22 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	8.80 µm/m-°C	4.89 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	20.0 W/m-K	139 BTU-in/hr-ft ² -°F	DIN EN 821-2
Maximum Service Temperature, Air			

Thermal Properties	1200 °C Metric	2190 °F English	Comments
Maximum Service Temperature, Inert	1200 °C	2190 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	96 %	96 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+8 ohm-cm	1.00e+8 ohm-cm	IEC 672-1
	@Temperature 400 °C	@Temperature 752 °F	
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 672-1
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Constant	8.0	8.0	IEC 672-1
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	17.0 kV/mm	432 kV/in	IEC 672-1
Dielectric Loss Index	0.0050	0.0050	IEC 672-1
	@Frequency 9.00e+9 Hz	@Frequency 9.00e+9 Hz	

Descriptive Properties	Value	Comments
Ra = Arithmetic Mean Roughness Value (µm)	<0.15	
Thermal Shock Resistance R1 (K)	96	calculated; $R1 = [s^2 (1-\mu)] / (a \cdot E)$

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