

CeramTec RK 87 Alumina, 99.8%

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-RK-87-Alumina-998.php

Physical Properties	Metric	English	Comments
Density	3.96 g/cc	0.143 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	15	15	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	2000	2000	HV1; DINV ENV 843-4
Tensile Modulus	406 GPa	58900 ksi	Young's; DINV ENV 843-2
Flexural Strength	630 MPa	91400 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	4.30 MPa-m ^{1/2}	3.91 ksi-in ^{1/2}	K _{IC} (SEVNB); DIN CEN/TS 14425-1
Shear Modulus	165 GPa	23900 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	7.50 µm/m-°C	4.17 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	8.50 µm/m-°C	4.72 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	30.0 W/m-K	208 BTU-in/hr-ft ² -°F	DIN EN 821-2
Maximum Service Temperature, Air			

Thermal Properties	1500 °C Metric	2730 °F English	Comments
Maximum Service Temperature, Inert	1500 °C	2730 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	99.8 %	99.8 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.00e+8 ohm-cm	5.00e+8 ohm-cm	IEC 672-1
	@Temperature 400 °C	@Temperature 752 °F	
	5.00e+14 ohm-cm	5.00e+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	19.0 kV/mm	483 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)	<0.05	
Thermal Shock Resistance R1 (K)	159	calculated; R1 = [s? (1-µ)] / (a·E)

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