

CeramTec Rubalit® HSS Alumina, 75% (High Strength Substrate)

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Rubalit® HSS (High Strength Substrate) displays the successful union of elasticity and strength. The ultrafine microstructure of Rubalit® HSS is the basis for its outstanding substrate surface quality. A high and consistent surface quality allows for the scale of integration and power density that will in the future be required as a result of component miniaturization. With their thermal cycling resistance and excellent thermal conductivity, Rubalit® HSS substrates are ideal for advanced processes and applications. Rubalit® HSS opens potentials in applications involving heavy mechanical loads combined with extreme demands in terms of thermal cycling resistance and surface quality. Combined with new high caliber technologies, this offers many potentials for the future. Innovative solutions will allow access to new applications in the automotive, power supply, sensor, durable goods, telecom, medical, and aerospace industries.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Rubalit-HSS-Alumina-75-High-Strength-Substrate.php

Physical Properties	Metric	English	Comments
Density	4.35 g/cc	0.157 lb/in ³	DIN EN 993: part 2
Water Absorption	0.00 %	0.00 %	ASTM C373-88
Particle Size	2.0 µm	2.0 µm	Medium Grain (d50)
Thickness	200 - 400 microns	7.87 - 15.7 mil	

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	335 GPa	48600 ksi	DIN V ENV 843-2
Flexural Strength	700 MPa	102000 psi	Bending Strength; 3-point method (30 mm/15 mm); 15 x d (mm); DIN EN 843-1
	800 MPa	116000 psi	Bending Strength; Double-Ring (40 mm/20 mm); 0.63 mm; DIN EN 1288

Thermal Properties	Metric	English	Comments
CTE, linear	8.20 µm/m-°C	4.56 µin/in-°F	DIN 51045
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
	8.80 µm/m-°C	4.89 µin/in-°F	DIN 51045
	@Temperature 20.0 - 600 °C	@Temperature 68.0 - 1110 °F	
	9.50 µm/m-°C	5.28 µin/in-°F	DIN 51045
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	

Specific Heat Capacity Thermal Properties	0.690 J/g-°C Metric	0.165 BTU/lb-°F English	ASTM-E1269 Comments
Thermal Conductivity	22.0 W/m-K	153 BTU-in/hr-ft²-°F	DIN EN 821: part 2; Laserflash

Electrical Properties	Metric	English	Comments
Volume Resistivity	1e+05	1e+05	IEC 345
	@Temperature 600 °C	@Temperature 1110 °F	
	1.00e+7 ohm-cm	1.00e+7 ohm-cm	IEC 345
	@Temperature 400 °C	@Temperature 752 °F	
	1.00e+10 ohm-cm	1.00e+10 ohm-cm	IEC 345
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	1.00e+10 ohm-cm	1.00e+10 ohm-cm	IEC 345
	@Temperature 200 °C	@Temperature 392 °F	
Dielectric Constant	9.0	9.0	IEC 250
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
	12.5	12.5	IEC 250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Breakdown	>= 6250 V	>= 6250 V	DIN EN 60243
	@Thickness 0.250 mm	@Thickness 0.00984 in	

Descriptive Properties	Value	Comments
Color	Cream	
Ra = Arithmetic Mean Roughness Value (µm)	Profilometer (cutoff 0.8 mm); DIN ISO 4287	

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