

CeramTec 645 Steatite (MgO-SiO2)

Category : Ceramic , Oxide , Magnesium Oxide , Silicon Oxide

Material Notes:

Te value is 810°C. Hasselman Thermal Shock value is 600 K.Data provided by CeramTec North America.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-645-Steatite-MgO-SiO2.php

Physical Properties	Metric	English	Comments
Density	2.70 g/cc	0.0975 lb/in ³	
Water Absorption	0.00 %	0.00 %	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	450	450	HV 0.5
Tensile Strength, Ultimate	61.9 MPa	8980 psi	ACMA Test #4
Modulus of Elasticity	107 GPa	15500 ksi	Ultrasonic
Flexural Strength	131 MPa	19000 psi	20 x 40 mm
Compressive Strength	585 MPa	84800 psi	ASTM C773-88
Poissons Ratio	0.23	0.23	ASTM C-1 259-94
Shear Modulus	44.0 GPa	6380 ksi	Ultrasonic

Thermal Properties	Metric	English	Comments
CTE, linear	8.20 $\mu\text{m}/\text{m}\cdot\text{°C}$	4.56 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 25.0 - 300 °C	@Temperature 77.0 - 572 °F	
	8.90 $\mu\text{m}/\text{m}\cdot\text{°C}$	4.94 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 25.0 - 700 °C	@Temperature 77.0 - 1290 °F	
	9.40 $\mu\text{m}/\text{m}\cdot\text{°C}$	5.22 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 25.0 - 1001 °C	@Temperature 77.0 - 1834 °F	
Specific Heat Capacity	1.10 J/g-°C	0.263 BTU/lb-°F	
Thermal Conductivity	5.50 W/m-K	38.2 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	1000 °C	1830 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	4.00e+6 ohm-cm	4.00e+6 ohm-cm	
	@Temperature 700 °C	@Temperature 1290 °F	
	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Dielectric Constant	5.8	5.8	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	8.268 kV/mm	210.0 kV/in	
	@Thickness 6.35 mm	@Thickness 0.250 in	
Dissipation Factor	0.0019	0.0019	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.0021	0.0021	
	@Frequency 60 Hz	@Frequency 60 Hz	
Dielectric Loss Index	0.011	0.011	1 MHz; 20°C

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