CeramTec 665 Steatite, MgO•SiO2

Category : Ceramic , Oxide , Magnesium Oxide , Silicon Oxide

Material Notes:

Steatites used in place of aluminas are a cost-effective way to meet performance requirements. They are easier to form and fire at lower temperatures. 665 L533C has low dielectric loss. It makes excellent insulators for radio frequency applications.

Order this product through the following link:
http://www.lookpolymers.com/polymer_CeramTec-665-Steatite-MgOSiO2.php

Physical Properties	Metric	English	Comments
Density	2.80 g/cc	0.101 lb/in³	DIN EN 623-2 / ASTM-C373 / ASTM-C20
Water Absorption	0.00 %	0.00 %	DIN EN 623-2 / ASTM-C373

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	420	420	HV 0.5; DINV ENV 843-4
Tensile Strength at Break	68.8 MPa	9980 psi	ACMA Test #4 / DIN EN 843-1
Tensile Modulus	117 GPa	17000 ksi	Young's; DINV ENV 843-2 / ASTM-F417
Flexural Strength	145 MPa	21000 psi	20 x 40 mm
Compressive Strength	619 MPa	89800 psi	ASTM C-773-88 / DIN 51067T1
Poissons Ratio	0.25	0.25	DINV ENV 843-2
Shear Modulus	45.0 GPa	6530 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	6.90 µm/m-°C @Temperature 20.0 - 200 °C	3.83 µin/in-°F @Temperature 68.0 - 392 °F	
	7.80 µm/m-°C @Temperature 20.0 - 600 °C	4.33 µin/in-°F @Temperature 68.0 - 1110 °F	ASTM-C373
	8.00 µm/m-°C @Temperature 20.0 - 1000 °C	4.44 µin/in-°F @Temperature 68.0 - 1830 °F	
Specific Heat Capacity	1.10 J/g-°C @Temperature 100 - 200 °C	0.263 BTU/lb-°F @Temperature 212 - 392 °F	DINV ENV 821-3

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	1000 °C	1830 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	800000 ohm-cm @Temperature 900 °C	800000 ohm-cm @Temperature 1650 °F	
	3.00e+8 ohm-cm @Temperature 500 °C	3.00e+8 ohm-cm @Temperature 932 °F	
	>= 1.00e+14 ohm-cm @Temperature 25.0 °C	>= 1.00e+14 ohm-cm @Temperature 77.0 °F	ASTM-D257
	1.00e+14 ohm-cm @Temperature 100 °C	1.00e+14 ohm-cm @Temperature 212 °F	IEC 672-1
Dielectric Constant	6.1 @Frequency 1.00e+6 Hz	6.1 @Frequency 1.00e+6 Hz	IEC 672-1 / ASTM-C150
Dielectric Strength	9.055 kV/mm	230.0 kV/in	6.35 mm (1/4") IEC 672-1
Dissipation Factor	0.00080 @Frequency 1.00e+6 Hz	0.00080 @Frequency 1.00e+6 Hz	
	0.0020 @Frequency 1.00e+10 Hz	0.0020 @Frequency 1.00e+10 Hz	
Dielectric Loss Index	0.0050 @Frequency 1.00e+6 Hz	0.0050 @Frequency 1.00e+6 Hz	IEC 672-1 / ASTM-D149,150

Descriptive Properties	Value	Comments
Color	Buff	
Te Value (°C)	870	
Thermal Shock Resistance R1 (K)	650	Hasselman (Experimental)

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