

CeramTec Frequenta® Steatite

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. Frequenta® has low dielectric loss, but has been developed for superior strength and low thermal conductivity for higher temperature applications.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Frequentia-Steatite.php

Physical Properties	Metric	English	Comments
Density	2.80 g/cc	0.101 lb/in ³	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
Tensile Modulus	120 GPa	17400 ksi	Young's; DINV ENV 843-2 / ASTM-F417
Compressive Strength	900 MPa	131000 psi	ASTM C-773-88 / DIN 51067T1

Thermal Properties	Metric	English	Comments
CTE, linear	6.00 - 8.00 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	3.33 - 4.44 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	
	@Temperature 20.0 - 200 $^\circ\text{C}$	@Temperature 68.0 - 392 $^\circ\text{F}$	
	7.00 - 9.00 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	3.89 - 5.00 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	ASTM-C373
	@Temperature 20.0 - 600 $^\circ\text{C}$	@Temperature 68.0 - 1110 $^\circ\text{F}$	
	8.00 - 9.00 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	4.44 - 5.00 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	
	@Temperature 20.0 - 1000 $^\circ\text{C}$	@Temperature 68.0 - 1830 $^\circ\text{F}$	
Specific Heat Capacity	0.850 J/g- $^\circ\text{C}$	0.203 BTU/lb- $^\circ\text{F}$	
	@Temperature 100 - 200 $^\circ\text{C}$	@Temperature 212 - 392 $^\circ\text{F}$	DINV ENV 821-3
Thermal Conductivity	2.50 W/m-K	17.4 BTU-in/hr-ft ² - $^\circ\text{F}$	DIN EN 821-2 / ASTM-C408
Maximum Service Temperature, Air	1000 $^\circ\text{C}$	1830 $^\circ\text{F}$	

Electrical Properties	Metric	English	Comments
	1.00e+7 ohm-cm	1.00e+7 ohm-cm	

Volume Resistivity Electrical Properties	Metric @ Temperature 500 °C	English @ Temperature 932 °F	Comments
	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 672-1
	@Temperature 100 °C	@Temperature 212 °F	
Dielectric Constant	6.0	6.0	IEC 672-1 / ASTM-C150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Loss Index	0.0012	0.0012	IEC 672-1 / ASTM-D149,150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
Color	Buff	
Thermal Shock Resistance R1 (K)	160	Hasselmann (Experimental)

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