

## CeramTec Rocar® ST Silicon Carbide, SSiC

Category : Ceramic , Carbide

### Material Notes:

Silicon carbide is extremely hard and displays excellent corrosion and thermal shock resistance. Its outstanding sliding properties and high thermal conductivity make useful in tribological applications. SSiC is resistant to all chemical media. Since no metallic silicon is present in the matrix, it can be used at temperatures up to 1600°C without impaired strength. Rocar® ST has excellent volume-production axial dry-press performance which, in turn, results in process reliability combined with lower production costs.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_CeramTec-Rocar-ST-Silicon-Carbide-SSiC.php](http://www.lookpolymers.com/polymer_CeramTec-Rocar-ST-Silicon-Carbide-SSiC.php)

Physical Properties	Metric	English	Comments
Density	3.11 g/cc	0.112 lb/in <sup>3</sup>	DIN EN 623-2
Water Absorption	0.00 %	0.00 %	Open Porosity; DIN EN 623-2
Porosity	2.0 %	2.0 %	closed (approximate)
Permeability	0.00	0.00	%, Gas
Weibull Modulus	>= 8.0	>= 8.0	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	2500	2500	HV1; DINV ENV 843-4
Tensile Modulus	420 GPa	60900 ksi	Young's; DINV ENV 843-2
Flexural Strength	400 MPa	58000 psi	DIN EN 843-1
Compressive Strength	2200 MPa	319000 psi	DIN 51067T1
Poissons Ratio	0.16	0.16	DINV ENV 843-2
Fracture Toughness	3.80 MPa-m <sup>1/2</sup>	3.46 ksi-in <sup>1/2</sup>	K <sub>IC</sub> (SEVNB); DIN CEN/TS 14425-1
	4.10 MPa-m <sup>1/2</sup>	3.73 ksi-in <sup>1/2</sup>	K <sub>IC</sub> ; DIN 51109
Shear Modulus	181 GPa	26300 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	3.60 µm/m-°C	2.00 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	4.00 µm/m-°C	2.22 µin/in-°F	DIN EN 821-1

Thermal Properties	Metric @Temperature 20.0 - 400 °C	English @Temperature 68.0 - 750 °F	Comments
	4.40 µm/m-°C	2.44 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 600 °C	@Temperature 68.0 - 1110 °F	
	4.60 µm/m-°C	2.56 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.600 J/g-°C	0.143 BTU/lb-°F	DINV ENV 821-3
Thermal Conductivity	100 W/m-K	694 BTU-in/hr-ft <sup>2</sup> -°F	DIN EN 821-2
Maximum Service Temperature, Air	1400 °C	2550 °F	
Maximum Service Temperature, Inert	1800 °C	3270 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	10 ohm-cm	10 ohm-cm	IEC 672-1
	@Temperature 400 °C	@Temperature 752 °F	
	5.00e+7 ohm-cm	5.00e+7 ohm-cm	IEC 672-1
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Descriptive Properties	Value	Comments
Ra = Arithmetic Mean Roughness Value (µm)	<0.1	
Thermal Shock Resistance R1 (K)	222	calculated; R1 = [s? (1-µ)] / (a·E)

## Contact Songhan Plastic Technology Co.,Ltd.

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