

## CeramTec Rocar® S Silicon Carbide, SSiC

Category : Ceramic , Carbide

### Material Notes:

Rocar® is an extremely lightweight silicon carbide ceramic. It permits a reduction in mass forces at high speeds, and is considered for its hardness, excellent resistance to corrosion and sudden changes in temperature, excellent anti-friction properties, and higher heat conductivity over steel. The various types of Rocar include sintered and silicon infiltrated silicon carbide. 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.

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Density	3.15 g/cc	0.114 lb/in <sup>3</sup>	DIN EN 623-2 / ASTM-C373 / ASTM-C20
Water Absorption	0.00 %	0.00 %	DIN EN 623-2 / ASTM-C373
Porosity	2.0 %	2.0 %	Closed (approximate)
Permeability	0.00	0.00	Gas
Weibull Modulus	>= 10	>= 10	DINV ENV 843-5

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	2300	2300	HV 0.5; DINV ENV 843-4
Tensile Strength at Break	410 MPa	59500 psi	ACMA Test #4 / DIN EN 843-1
Tensile Modulus	430 GPa	62400 ksi	Young's; DINV ENV 843-2 / ASTM-F417
Flexural Strength	410 MPa	59500 psi	DIN EN 843-1
Compressive Strength	3500 MPa	508000 psi	ASTM C-773-88 / DIN 51067T1
Poissons Ratio	0.17	0.17	DINV ENV 843-2
Fracture Toughness	4.40 MPa-m <sup>1/2</sup>	4.00 ksi-in <sup>1/2</sup>	DIN 51109
Shear Modulus	184 GPa	26700 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	3.00 µm/m-°C	1.67 µin/in-°F	DIN EN 821-1
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	3.60 µm/m-°C	2.00 µin/in-°F	DIN EN 821-1

Thermal Properties	Metric @Temperature 20.0 - 400 °C	English @Temperature 68.0 - 750 °F	Comments
	4.10 µm/m-°C	2.28 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
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
Thermal Conductivity	115 W/m-K	798 BTU-in/hr-ft <sup>2</sup> -°F	DIN EN 821-2 / ASTM-C408
Maximum Service Temperature, Air	1500 °C	2730 °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	
	1000 ohm-cm	1000 ohm-cm	IEC 672-1
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Loss Index	0.20	0.20	IEC 672-1
	@Frequency 9.00e+9 Hz	@Frequency 9.00e+9 Hz	

Descriptive Properties	Value	Comments
Color	Black	
Ra = Arithmetic Mean Roughness Value (µm)	Profilometer (0.8 mm Cutoff)	

## Contact Songhan Plastic Technology Co.,Ltd.

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