

CoorsTek Reaction Bonded Silicon Carbide, SCRB (SC-2)

Category : Ceramic , Carbide

Material Notes:

Thermal Shock Delta Tc = 400°C - Thermal shock tests are performed by quenching samples in water from different elevated temperatures. Delta Tc is the change in temperature which results in a sharp decrease in the flexural strength of the sample. Information provided by CoorsTek.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CoorsTek-Reaction-Bonded-Silicon-Carbide-SCRB-SC-2.php

Physical Properties	Metric	English	Comments
Density	3.10 g/cc	0.112 lb/in ³	ASTM C20
Water Absorption	0.00 %	0.00 %	ASTM C373
Particle Size	12 µm	12 µm	Average Crystal Size - Thin Section Test

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	24.5	24.5	1000 g load
Tensile Strength, Ultimate	307 MPa	44500 psi	ACMA Test #4
Modulus of Elasticity	393 GPa	57000 ksi	ASTM C848
Flexural Strength	462 MPa	67000 psi	ASTM F417
Compressive Strength	2500 MPa	363000 psi	ASTM C773
Poissons Ratio	0.19	0.19	ASTM C848
Fracture Toughness	4.00 - 5.00 MPa-m ^{1/2}	3.64 - 4.55 ksi-in ^{1/2}	
Shear Modulus	165 GPa	23900 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	4.30 µm/m-°C	2.39 µin/in-°F	ASTM C372
	@Temperature 25.0 - 1000 °C	@Temperature 77.0 - 1830 °F	
Specific Heat Capacity	0.700 J/g-°C	0.167 BTU/lb-°F	ASTM E1269
Thermal Conductivity	125 W/m-K	868 BTU-in/hr-ft ² -°F	ASTM C408
Maximum Service Temperature, Air	1400 °C	2550 °F	No Load

Optical Properties	Metric	English	Comments
Transmission, Visible	0.00 %	0.00 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	<= 1000 ohm-cm	<= 1000 ohm-cm	
	@Temperature 500 °C	@Temperature 932 °F	
	<= 1000 ohm-cm	<= 1000 ohm-cm	
	@Temperature 1000 °C	@Temperature 1830 °F	
	<= 1000 ohm-cm	<= 1000 ohm-cm	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

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