

CoorsTek Direct Sintered Silicon Carbide, SC DS (SC-30, UltraSiC™)

Category : Ceramic , Carbide

Material Notes:

Thermal Shock Delta Tc = 300°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-Direct-Sintered-Silicon-Carbide-SC-DS-SC-30-UltraSiC.php

Physical Properties	Metric	English	Comments
Density	3.15 g/cc	0.114 lb/in ³	ASTM C20
Water Absorption	0.00 %	0.00 %	ASTM C373
Particle Size	5.0 µm	5.0 µm	Average Crystal Size - Thin Section Test

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	27.5	27.5	1000 g load
Modulus of Elasticity	410 GPa	59500 ksi	ASTM C848
Flexural Strength	480 MPa	69600 psi	ASTM F417
Compressive Strength	3500 MPa	508000 psi	ASTM C773
Poissons Ratio	0.21	0.21	ASTM C848
Fracture Toughness	4.00 - 5.00 MPa-m ^{1/2}	3.64 - 4.55 ksi-in ^{1/2}	
Shear Modulus	169 GPa	24500 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	4.40 µm/m-°C	2.44 µin/in-°F	ASTM C372
	@Temperature 25.0 - 1000 °C	@Temperature 77.0 - 1830 °F	
Thermal Conductivity	150 W/m-K	1040 BTU-in/hr-ft ² -°F	ASTM C408
Maximum Service Temperature, Air	1750 °C	3180 °F	No Load

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

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