

## Destech Silicon Carbide, Solid or Foamed

Category : Ceramic , Carbide , Other Engineering Material , Composite Core Material

### Material Notes:

Destech silicon carbide foam is produced by chemical vapor reaction (CVR), in which high temperature silicon bearing gases convert glassy, or vitreous, carbon foam to SiC. Destech SiC foam has no carbon core unlike SiC foams produced by chemical vapor deposition (CVD). SiC foam has increased density and electrical resistivity over its carbon counterpart, good oxidation resistance (up to 1650°C), good abrasion resistance, and excellent corrosion resistance (slight corrosion in molten bases, e.g. KOH). The properties shown are for solid, fine-grained, SiC. Ash content is less than 0.1%. Used for heating elements, electrodes, nozzles, and cylinders. Data provided by the manufacturer, Destech Corporation.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Destech-Silicon-Carbide-Solid-or-Foamed.php](http://www.lookpolymers.com/polymer_Destech-Silicon-Carbide-Solid-or-Foamed.php)

Physical Properties	Metric	English	Comments
Bulk Density	1.76 - 1.81 g/cc	0.0636 - 0.0654 lb/in <sup>3</sup>	Precursor/core material (fine grained isotropic graphite)
	3.12 g/cc	0.113 lb/in <sup>3</sup>	SiC
Density	3.20 g/cc	0.116 lb/in <sup>3</sup>	Apparent density (SiC outer layer)
Open Porosity	<= 0.50 % @Thickness 1.02 - 1.27 mm	<= 0.50 % @Thickness 0.0402 - 0.0500 in	Specified for fine grained SiC surface layer

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 231 MPa	>= 33500 psi	Typical for SiC
Flexural Strength	400 MPa	58000 psi	Typical for SiC
Compressive Yield Strength	>= 120 MPa	>= 17400 psi	Graphite substrate

Thermal Properties	Metric	English	Comments
CTE, linear	3.50 - 4.00 $\mu\text{m}/\text{m}\cdot\text{C}$	1.94 - 2.22 $\mu\text{in}/\text{in}\cdot\text{F}$	Precursor/core material (fine grained isotropic graphite)
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	3.50 - 4.20 $\mu\text{m}/\text{m}\cdot\text{C}$	1.94 - 2.33 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Maximum Service Temperature, Air	1650 °C	3000 °F	Maximum oxidation resistance temperature

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