

COI Ceramics Nicalon™ CG SiCO Ceramic Fiber

Category : Ceramic , Carbide

Material Notes:

Description: The fiber is homogeneously composed of ultra-fine beta-SiC crystallites and an amorphous mixture of silicon, carbon, and oxygen. The fiber has excellent strength and modulus properties for ceramic fibers, and retains its properties at high temperatures.

Nicalon™ is highly resistant to oxidation and chemical attack. **Product Forms:** Continuous Fiber: Supplied as multi-filament tow, spooled on 3 inch ID bobbins to 500 meters in length (100 grams in weight). Also available in random lengths at a reduced price. Woven Cloth: Available in three weave styles as shown in Table 2. Woven cloth is typically supplied as 1-meter-wide continuous rolls of specific lengths. Other weave or braid styles can be made available. Chopped Fiber: Available of 1-mm length chopped multi-filament tow. Longer lengths also available. Packaged as 3 kg containers. Felt / Mat: Random lengths of Nicalon™ ceramic fiber in a PVA binder. Customizable areal weights, shapes and sizes. **Uses:** Nicalon™ ceramic fiber can be used as a reinforcement for plastic, ceramic, and metal matrix composites to produce high performance composite materials. Surface treatments are normally recommended to facilitate processing and maximize composite properties. Nicalon™ can also be used to form fibrous products such as high temperature insulation, filters, etc. Its resistance to chemical attack allows it to be used in harsh environments. The standard grade of the Nicalon™ product line; offers the optimum mechanical properties and high temperature performance for most applications. Information from COI Ceramics, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_COI-Ceramics-Nicalon-CG-SiCO-Ceramic-Fiber.php

Physical Properties	Metric	English	Comments
Density	2.55 g/cc	0.0921 lb/in ³	
Filament Diameter	14 µm	14 µm	
Fiber Count	2000 dtex	1800 denier	

Mechanical Properties	Metric	English	Comments
Tensile Strength	3000 MPa	435000 psi	
Tensile Modulus	210 GPa	30500 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	3.20 µm/m-°C	1.78 µin/in-°F	
	@Temperature 25.0 - 500 °C	@Temperature 77.0 - 932 °F	
	3.90 µm/m-°C	2.17 µin/in-°F	
	@Temperature 900 °C	@Temperature 1650 °F	
Specific Heat Capacity	0.710 J/g-°C	0.170 BTU/lb-°F	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Thermal Properties	Metric	English	Comments
	@Temperature 500 °C	@Temperature 932 °F	
Thermal Conductivity	2.20 W/m-K	15.3 BTU-in/hr-ft ² -°F	
	@Temperature 500 °C	@Temperature 932 °F	
	2.97 W/m-K	20.6 BTU-in/hr-ft ² -°F	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	32 %	32 %	
Oxygen, O	12 %	12 %	
Silicon, Si	57 %	57 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1000 ohm-cm	1000 ohm-cm	
Dielectric Constant	9.2	9.2	

Descriptive Properties	Value	Comments
Filaments per tow	500	

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