

## COI Ceramics Sylramic™ S200 Silicon Carbide Ceramic Matrix Composite, CG Nicalon

Category : Ceramic , Carbide , Ceramic Matrix Composite

### Material Notes:

Engineered ceramic composite structure.Reinforcing Fiber Flexibility: S400 - Carbon Pre ceramic Polymer Matrix Precursors: S400 - Crystalline (SiC + Si3N4) or SiCPhysical Attributes: Dense Matrix (

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_COI-Ceramics-Sylramic-S200-Silicon-Carbide-Ceramic-Matrix-Composite-CG-Nicalon.php](http://www.lookpolymers.com/polymer_COI-Ceramics-Sylramic-S200-Silicon-Carbide-Ceramic-Matrix-Composite-CG-Nicalon.php)

Mechanical Properties	Metric	English	Comments
Tensile Strength	262 MPa	38000 psi	
	@Treatment Temp. 20.0 °C	@Treatment Temp. 68.0 °F	
	300 MPa	43500 psi	
	@Treatment Temp. 1000 °C	@Treatment Temp. 1830 °F	
Tensile Stress	49.0 MPa	7110 psi	
	@Strain 0.0500 %, Temperature 1204 °C	@Strain 0.0500 %, Temperature 2199 °F	
	50.0 MPa	7250 psi	
	@Strain 0.0500 %, Temperature 20.0 °C	@Strain 0.0500 %, Temperature 68.0 °F	
	60.0 MPa	8700 psi	
	@Strain 0.0500 %, Temperature 982 °C	@Strain 0.0500 %, Temperature 1800 °F	
	90.3 MPa	13100 psi	
	@Strain 0.100 %, Temperature 1204 °C	@Strain 0.100 %, Temperature 2199 °F	
	95.1 MPa	13800 psi	
	@Strain 0.100 %, Temperature 982 °C	@Strain 0.100 %, Temperature 1800 °F	
	105 MPa	15200 psi	
	@Strain 0.100 %, Temperature 20.0 °C	@Strain 0.100 %, Temperature 68.0 °F	
	160 MPa	23200 psi	
	@Strain 0.300 %, Temperature 1204 °C	@Strain 0.300 %, Temperature 2199 °F	

Mechanical Properties	170 MPa Metric	24700 psi English	Comments
	@Strain 0.300 %, Temperature 982 °C	@Strain 0.300 %, Temperature 1800 °F	
	<b>185 MPa</b>	<b>26800 psi</b>	
	@Strain 0.300 %, Temperature 20.0 °C	@Strain 0.300 %, Temperature 68.0 °F	
	<b>225 MPa</b>	<b>32600 psi</b>	
	@Strain 0.500 %, Temperature 1204 °C	@Strain 0.500 %, Temperature 2199 °F	
	<b>240 MPa</b>	<b>34800 psi</b>	
	@Strain 0.500 %, Temperature 982 °C	@Strain 0.500 %, Temperature 1800 °F	
	<b>260 MPa</b>	<b>37700 psi</b>	
	@Strain 0.500 %, Temperature 20.0 °C	@Strain 0.500 %, Temperature 68.0 °F	
<b>Tensile Strength, Yield</b>	<b>89.6 MPa</b>	<b>13000 psi</b>	
	@Strain 0.0800 %, Temperature 1000 °C	@Strain 0.0800 %, Temperature 1830 °F	
	<b>96.5 MPa</b>	<b>14000 psi</b>	
	@Strain 0.0900 %, Temperature 20.0 °C	@Strain 0.0900 %, Temperature 68.0 °F	
<b>Elongation at Break</b>	<b>0.50 %</b>	<b>0.50 %</b>	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	<b>0.70 %</b>	<b>0.70 %</b>	
	@Temperature 1000 °C	@Temperature 1830 °F	
<b>Elongation at Yield</b>	<b>0.08 %</b>	<b>0.08 %</b>	<b>Proportional Limit</b>
	@Temperature 1000 °C	@Temperature 1800 °F	
	<b>0.09 %</b>	<b>0.09 %</b>	<b>Proportional Limit</b>
	@Temperature 20 °C	@Temperature 68 °F	
<b>Tensile Modulus</b>	<b>90.0 GPa</b>	<b>13100 ksi</b>	
	@Temperature 1000 °C	@Temperature 1830 °F	
	<b>96.0 GPa</b>	<b>13900 ksi</b>	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
<b>Flexural Strength</b>	<b>379 MPa</b>	<b>55000 psi</b>	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Mechanical Properties	Metric <sup>°C</sup>	English <sup>°F</sup>	Comments
	@Temperature 1000 °C	@Temperature 1830 °F	
Compressive Strength	434 MPa	62900 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Shear Strength	24.0 MPa	3480 psi	
	@Temperature 1000 °C	@Temperature 1830 °F	
	38.0 MPa	5510 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	1.80 W/m-K	12.5 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 100 °C	@Temperature 212 °F	
	1.80 W/m-K	12.5 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 200 °C	@Temperature 392 °F	
	1.80 W/m-K	12.5 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 300 °C	@Temperature 572 °F	
	1.80 W/m-K	12.5 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 500 °C	@Temperature 932 °F	
	1.85 W/m-K	12.8 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 700 °C	@Temperature 1290 °F	
	1.85 W/m-K	12.8 BTU-in/hr-ft <sup>2</sup> -°F	Fill direction
	@Temperature 500 °C	@Temperature 932 °F	
	1.85 W/m-K	12.8 BTU-in/hr-ft <sup>2</sup> -°F	Warp direction
	@Temperature 500 °C	@Temperature 932 °F	
	1.90 W/m-K	13.2 BTU-in/hr-ft <sup>2</sup> -°F	Warp direction
	@Temperature 300 °C	@Temperature 572 °F	
	1.90 W/m-K	13.2 BTU-in/hr-ft <sup>2</sup> -°F	Thru-thickness
	@Temperature 900 °C	@Temperature 1650 °F	
	1.90 W/m-K	13.2 BTU-in/hr-ft <sup>2</sup> -°F	Fill direction
	@Temperature 300 °C	@Temperature 572 °F	
	1.95 W/m-K	13.5 BTU-in/hr-ft <sup>2</sup> -°F	

Thermal Properties	Metric @ Temperature 200 °C	English @ Temperature 392 °F	Warp direction Comments
	1.95 W/m-K @Temperature 200 °C	13.5 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 392 °F	Fill direction
	1.95 W/m-K @Temperature 1000 °C	13.5 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1830 °F	Thru-thickness
	1.95 W/m-K @Temperature 700 °C	13.5 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1290 °F	Fill direction
	1.95 W/m-K @Temperature 700 °C	13.5 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1290 °F	Warp direction
	2.10 W/m-K @Temperature 1000 °C	14.6 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1830 °F	Warp direction
	2.10 W/m-K @Temperature 1000 °C	14.6 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1830 °F	Fill direction
	2.10 W/m-K @Temperature 1200 °C	14.6 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 2190 °F	Thru-thickness
	2.15 W/m-K @Temperature 100 °C	14.9 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 212 °F	Warp direction
	2.15 W/m-K @Temperature 100 °C	14.9 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 212 °F	Fill direction
	2.15 W/m-K @Temperature 900 °C	14.9 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1650 °F	Fill direction
	2.15 W/m-K @Temperature 900 °C	14.9 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1650 °F	Warp direction
	2.40 W/m-K @Temperature 1200 °C	16.7 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 2190 °F	Warp direction
	2.40 W/m-K @Temperature 1200 °C	16.7 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 2190 °F	Fill direction

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