

# Quantum Lytex<sup>®</sup> 4181

## Sheet Molding Compound

### PRODUCT DESCRIPTION

Carbon Fiber reinforced epoxy molding compound

#### GENERAL

<b>Material Status</b>	• Commercial: Active		
<b>Availability</b>	• North America	• Europe	• Asia Pacific
<b>Filler/Reinforcement</b>	• 12K PAN Carbon Fiber	• Nominal 55% w/w	• Nominal 1" (25 mm) Length
<b>Features</b>	• Fatigue resistance • High strength	• High stiffness • Shelf Life 6 months @ 10°F or below	• Black Color
<b>Processing Method</b>	• <b>Lytex<sup>®</sup> 4181</b> can be molded at temperatures in the range of 260-340°F, with 325°F suggested as a starting point. Cure times will be dependent on molding temperature and part thickness and will typically be 10+ minutes. Detailed molding suggestions are available on request. Cool molded parts at ambient temperature. A cooling fixture may be needed depending on part thickness and geometry. Matched metal die molds.		
<b>Resin</b>	• Epoxy Composite		

PHYSICAL	Typical	Unit	Test Method
Density	1.48	g/cm <sup>3</sup>	ASTM D792
Shrinkage	<0.001	in/in	cold mold to cold part
CLTE, X-Y plane		ppm/°C	ASTM E831
CLTE, Z plane		ppm/°C	ASTM E831
Poisson's Ratio	0.33		ASTM D638

MECHANICAL (Machined)	Typical	Unit	Test Method
Tensile Modulus	4.6E+6 (31,700)	psi (MPa)	ASTM D3039
Tensile Stress (Break)	17,000 (117)	psi (MPa)	ASTM D3039
Flexural Modulus	4.3E+6 (29,600)	psi (MPa)	ASTM D790
Flexural Stress (Break)	53,000 (365)	psi (MPa)	ASTM D790
Short Beam Shear	5,200 (35.8)	psi (MPa)	ASTM D2344

Machined Properties are determined using specimen machined from molded 12"x12" panels with 80% mold coverage, 1000 psi pressure, 325°F mold temperature for 15 minutes

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<b>MECHANICAL (As molded)</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Modulus	7.8E+6 (53,800)	psi (MPa)	ASTM D638
Tensile Strength	25,000 (172)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	5.5E+6 (37,900)	psi (MPa)	ASTM D790
Flexural Strength	70,500 (486)	psi (MPa)	ASTM D790
<b>IMPACT</b>			
Izod Notched Impact Strength	29 (1549)	ft-lb/in (J/m)	ASTM D256
<b>THERMAL</b>			
Glass Transition T <sub>i</sub> , TanDelta	165	(°C)	ASTM D7028
Glass Transition T <sub>g</sub> , Storage Modulus	135	(°C)	ASTM D7028

For additional information, please contact:

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