

Product Data Sheet
LYTEX® 4149
Engineered Structural Composite (ESC) Molding Compound

LYTEX 4149 is a high-performance epoxy ESC molding compound reinforced with 3K tow carbon fiber (PAN) designed for military and aerospace structural applications requiring excellent mechanical properties, retention of properties at elevated temperatures, good chemical resistance, and low density.

TYPICAL PROPERTIES -- UNCURED

Form and Color Sheet, Black Fiber Length (Std.) 1 inch
Shelf Life: @ 10°F 6 Months Carbon Fiber Content 55%
Spiral Flow: @325°F (Mesa, 4000 psi) 13"

TYPICAL PROPERTIES -- CURED

<u>Test</u>	<u>Procedure</u>	<u>Value</u>
Specific Gravity	ASTM D-792	1.45
Shrinkage, inch/inch (mm/mm)	ASTM D-955	0.000 (0.000)
Flexural Strength, psi (MPa) ¹	ASTM D-790	89,000 (613)
Flexural Modulus, psi (GPa) ¹	ASTM D-790	5.0x10 ⁶ (34.5)
Tensile Strength, psi (MPa) ¹	ASTM D-638	42,000 (289)
Tensile Modulus, psi (GPa) ¹	ASTM D-638	8.0x10 ⁶ (55.1)
Ultimate Elongation, %	ASTM D-638	0.487
Izod Impact, notched, ft.lb/in. (J/M)	ASTM D-256	18 (960)
Compression Strength, psi (MPa) ¹	ASTM D-695	40,000 (275)
Compression Modulus, psi (GPa) ¹	ASTM D-695	4.6x10 ⁶ (31.7)
Shear Strength, in- plane, psi (MPa) ¹	ASTM D-5379	30,000 (206)
Shear Modulus, in- plane, psi (GPa) ¹	ASTM D-5379	1.6x10 ⁶ (11)
Shear Strength, interlaminar, psi (MPa) ¹	ASTM D-5379	9,500 (65.5)
Shear Modulus, interlaminar, psi (GPa) ¹	ASTM D-5379	0.42x10 ⁶ (2.9)
Coefficient of Thermal Expansion	TMA	2x10 ⁻⁶ /°F
Heat Deflection Temperature	ASTM D-648	>575°F (300°C)
Continuous Use Temperature (1000 hrs.)		350°F (175°C)
Thermal Conductivity, Watts/M °K		0.474

Handling Suggestions -- **LYTEX 4149** that is uncured should have minimum exposure to moisture. Mold temperatures in the range of 265 - 330°F can be utilized, with 280°F suggested as a starting point. Cure times will be dependent on temperature and part thickness and will typically be 5 to 10 minutes. Detailed molding suggestions are available upon request.

Precautions -- **LYTEX 4149** contains carbon fibers and should be handled carefully in order to minimize skin contact. Molding areas should be well-ventilated to minimize exposure to fumes. Presses must be provided with local exhaust to remove vapors from work areas. If adequate ventilation is not available, a respirator approved for removing organic vapor must be used. Care must be taken to prevent contact of carbon fibers with electrical equipment.

WARRANTY -- The above information is offered for your consideration, investigation, and verification. No warranty, expressed or implied, is given, nor is freedom from any patents owned by Quantum Composites, Inc. or others implied. Final determination of the suitability of this material is the sole responsibility of the buyer. Contact our sales representative for assistance in developing procedures to fit individual requirements.

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¹Tensile and Flexural Properties are determined using net shape molded specimens. Values obtained on cut specimens will typically be lower.