

**Technical Data Sheet**  
**Quantum AMC 8590**  
 Engineered Composites



**Product Description**

Carbon fiber reinforced hybrid vinyl ester molding compound

**General**

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• 12K PAN Carbon Fiber	• Nominal 53% w/w	• Nominal 1" (25 mm) Length
Features	• Fatigue Resistance • High Strength	• High Stiffness • Black Color	• Shelf Life 2 months @ 75°F or below
Processing Method	• AMC 8590 can be molded at temperatures in the range of 260-310°F, with 280°F suggested as a starting point. Cure times will be dependent on molding temperature and part thickness and will typically be 3-5 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 molds recommended.		
Resin	• VE Hybrid Composite		

Physical	Typical	Unit	Test Method
Density	1.48	g/cm <sup>3</sup>	ASTM D792
Shrinkage	<0.000	in/in	cold mold to cold part
CLTE, X-Y plane	12	ppm/°C	ASTM E831
CLTE, Z plane	60	ppm/°C	ASTM E831
Poisson's Ratio	0.33		ASTM D638
Mechanical (Machined)	Typical	Unit	Test Method
Tensile Modulus	5.3E+6 (36,500)	psi (MPa)	ASTM D3039
Tensile Strength	23,500 (162)	psi (MPa)	ASTM D3039
Flexural Modulus	4.1E+6 (28,300)	psi (MPa)	ASTM D790
Flexural Strength	65,000 (448)	psi (MPa)	ASTM D790
Short Beam Shear	8,000 (55.2)	psi (MPa)	ASTM D2344
Mechanical (As Molded)	Typical	Unit	Test Method
Tensile Modulus	9.0E+6 (62,100)	psi (MPa)	ASTM D638
Tensile Strength	40,000 (276)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	5.2E+6 (35,900)	psi (MPa)	ASTM D790
Flexural Strength	90,000 (621)	psi (MPa)	ASTM D790
Impact	Typical	Unit	Test Method
Izod Notched Impact Strength	28 (1495)	ft-lb/in (J/m)	ASTM D256
Thermal	Typical	Unit	Test Method
Glass Transition T <sub>g</sub> , TanDelta	142	(°C)	ASTM D7028
Glass Transition T <sub>g</sub> , Storage Modulus	118	(°C)	ASTM D7028

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**Notes**

These are typical property values not to be construed as specification limits.

**Processing Techniques**

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

**Company Information**

For further information regarding the LyondellBasell company, please visit <http://www.lyb.com/>.

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