

# Quantum HTC 9510

## Sheet Molding Compound

### PRODUCT DESCRIPTION

Glass Fiber reinforced Bismaleimide molding compound

#### GENERAL

<b>Material Status</b>	• Commercial: Active		
<b>Availability</b>	• North America	• Europe	• Asia Pacific
<b>Filler/Reinforcement</b>	• E-glass Fiber	• Nominal 52% w/w	• Nominal 1" (25 mm) Length
<b>Features</b>	• High stiffness • High strength	• Natural Color • Shelf Life 6 months @ 10°F or below	
<b>Processing Method</b>	• <b>HTC® 9510</b> can be molded at temperatures in the range of 260-350°F, with 300°F suggested as a starting point. Cure times will be dependent on molding temperature and part thickness and will typically be 25+ 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. Post cure at 500F is recommended for best results		
<b>Resin</b>	• BMI Composite		

PHYSICAL	Typical	Unit	Test Method
Density	1.82	g/cm <sup>3</sup>	ASTM D792
Shrinkage	<0.002	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	psi (MPa)	ASTM D638

MECHANICAL (Machined)	Typical	Unit	Test Method
Tensile Modulus	2.5E+6 (17,236)	psi (MPa)	ASTM D3039
Tensile Stress (Break)	24,000 (165)	psi (MPa)	ASTM D3039
Compressive Strength (RT)	36,000 (248)	psi (MPa)	ASTM D3410
Compressive Strength (300)	34,000 (248)	psi (MPa)	ASTM D3410
Compressive Strength (350)	32,000 (248)	psi (MPa)	ASTM D3410

Machined Properties are determined using specimen machined from molded 12"x12" panels with 80% mold coverage, 1000 psi pressure, 325°F mold temperature for 25 minutes, 4 hr post cure at 500°F.

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## Sheet Molding Compound

<b>MECHANICAL (As molded)</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Modulus (RT)	4.0E+6 (27,600)	psi (GPa)	ASTM D638
Tensile Strength (RT)	28,500 (196)	psi (MPa)	ASTM D638
Tensile Strength (350F)	28,500 (196)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	4.0E+6 (27,600)	psi (GPa)	ASTM D790
Flexural Strength (RT)	94,000 (648)	psi (MPa)	ASTM D790
Flexural Strength (350F)	70,000 (483)	psi (MPa)	ASTM D790

  

<b>IMPACT</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Izod Notched Impact Strength	30 (1600)	ft-lb/in (J/m)	ASTM D256

  

<b>THERMAL</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Glass Transition T <sub>g</sub> , TanDelta	379	(°C)	ASTM D7028
Glass Transition T <sub>g</sub> , Storage Modulus	325	(°C)	ASTM D7028

### Typical Process Parameters

Suggested Equipment needed:

Circulating Air / Convection Oven

1. Pre-weigh desired amount of molding compound and cut charge pattern.
2. Pre-stage molding compound at 200°F ±5°F in an oven for 16±0.5-hours.
3. Place in mold at 260-325°F for 25 minute cure cycle depending on part thickness at 1000 PSI.
  - a. Thicker parts may take longer to cure.
4. Post cure at temperature up to 500°F±20°F for a minimum of 4-hours, then allow to cool to room temperature.
5. For above data specimen were allowed to cool to room temperature out of mold then placed in oven and the temperature was ramped to 500°F. After two hours the samples were taken out of the oven and allowed to cool to room temperature.

The carrier film may tend to cling to the ESC®. It is easiest to remove after the charge has been pre-staged in the oven.

For additional information, please contact:

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