

MS-1D

280° F Cure High Modulus Compression Molding System

MS-1D is a high performance carbon fiber/epoxy resin compression molding system based on high modulus pitch carbon fiber. MS-1D compression molding compound offers a more economical alternative to high modulus, PAN based compression molding compounds and yields unparalleled stiffness with moderate strength.

TYPICAL MS-1D PROCESS PARAMETERS

- Pre-weigh the desired amount of molding compound.
- Pre-heat molding compound in 160° F \pm 10° F oven for 10 minutes. Form mold charge to approximately fit cavity. Charge cavity with molding compound.
- Cure temperature: 280° F - 310° F, pinch pressure: 250 psi for 15 – 30 seconds. Close mold to 2000 psi, hold 30 minutes.

MS-1D AMBIENT/DRY MECHANICAL PROPERTIES

<i>Property*</i>	<i>ASTM Method</i>	<i>Coupon Form</i>	<i>Avg. Value</i>
Tensile Strength (ksi)	D 3039	Net Molded	28
Tensile Modulus (msi)	D 3039	Net Molded	19
Compressive Strength (ksi)	D 3410	Net Molded	26
Compressive Modulus (msi)	D 3410	Net Molded	19
Flexural Strength (ksi)	D 790	Net Molded	50
Flexural Modulus (msi)	D 790	Net Molded	13
Notched Shear Strength (ksi)	D 5370	Machined	19
Notched Shear Modulus (msi)	D 5370	Machined	3.5
Bolt Bearing Str. (ksi) [Single Shear]	D 5961	Machined	32

* All properties normalized to 52% fiber volume.

MS-1D PHYSICAL PROPERTIES

<i>Property</i>	<i>Test Method</i>	<i>Average Value</i>
Fiber Length (inches)	N/A	1
Density (g/cm ³)		1.63 – 1.72
Tg (° F), Post Cured @ 350° F	DSC	327

Actual molding technique and conditions, fiber length, and part geometry will affect properties obtained.

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