



Nova MC

Specialized Molding Compounds

Description:

PMT's Specialized Nova Molding Compounds is a family of bulk molding compounds designed to rapidly produce complex composite structures with high performance properties. The systems consist of a low tack space grade epoxy resin system impregnated into high performance carbon fiber. The prepreg is slit and chopped into narrow ribbons to create the molding compound.

Applications:

PMT Nova molding compounds can be used to replace metal structures or inserted into applications designed specifically around the unique properties that can be obtained. These systems work well for large volume complex parts that would be challenging to manufacture using standard layup techniques. Because of the low density, low outgassing, high stiffness and near zero CTE these molding compounds are a natural fit for space and aerospace systems.

Material Systems and Properties:

Designation	Nova-55	Nova-63
Resin	PMT-F16+CNT	PMT-F16+CNT
Fiber	M55J	HM63
Cured Density (g/cc)	1.58	1.56
Tg (°C) Dry	200	202
Tg (°C) Wet	172	171
Tensile Strength (Ksi)	42	40
Tensile Modulus (Msi)	18.3	14.2
SBS (Ksi)	6.2	6
Compression Strength (Ksi)	24.5	36.4
Compression Modulus (Msi)	13.5	11.4
#2-56 Bolt pull out strength (lbf)	237.8	240.5
CTE-z- (um/mF)	33.7	27.5
CTE-x,y- (um/mF)	0.2	0.5
Cure Temperature (°C)	190	190
Cure Time (Min)	45	45

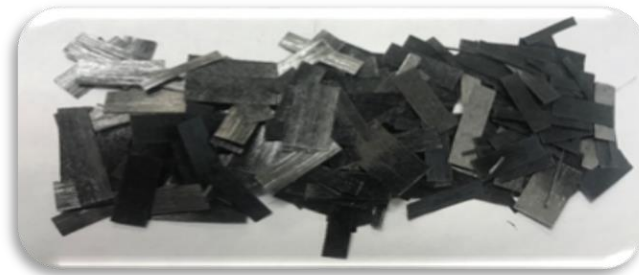


Storage:

Nova-55 & Nova-63 has a storage life of 3 months when stored at 0°F and a handling life of 3 days when stored at 75°F.

Material Processing:

Our molding compounds can be processed in a multitude of ways. The simplest form of processing uses heat to reduce the viscosity of the material and then pressure to force the fiber and resin to flow evenly into a cavity.



PMT-MC consists of continuous prepreg slit and chopped into a randomly distributed array of material. The molding compound is pre-formed into a charge of specific shape and weight.

The charge is placed into a metal, closed cavity tool to apply heat and pressure. After curing the part is ejected from the tool without reducing the tool temperature.

The ejected part can consist of complex geometries that would be impossible to manufacture using continuous fiber processes. Threaded inserts can be co molded into the parts negating the need for secondary machining operations.

