

Forged Bulk Compound

BE50-V1E

Epoxy Resin Base Carbon Fiber Forged Bulk Compound

Product benefits

- Chemical resistance
- High Stiffness
- Dimensional Stability
- Easy to machine
- Good to mold thick part

		English		Metric	
MATERIAL	Test Method	Typical Value	Unit	Typical Value	Unit
Nominal Fiber Length	MCG method	0.25	inch	6.0	mm
Nominal Fiber Content by weight	MCG method	45	%	45	%
MECHANICAL					
Density	ASTM D792	95.0	lb/ft ³	1.52	g/cm ³
Tensile Strength	ISO527-4	7,346	psi	51	MPa
Tensile Modulus of Elasticity	ISO527-4	3,310	ksi	23	GPa
Flexural Strength	ISO 14125	32,284	psi	223	MPa
Flexural Modulus of Elasticity	ISO 14125	3,549	ksi	25	GPa
Compressive Strength	ASTM D6484	26,361	psi	182	MPa
Compressive Modulus of Elasticity	ASTM D6484	3,193	ksi	22	GPa
Notched Izod Impact	ASTM D256	6.89	ft-lb/in	368	J/m
Unnotched Izod Impact	ASTM D4812	9.1	ft-lb/in	487	J/m
THERMAL					
Glass Transition (T _g)	ASTM D4065	293	°F	145	°C
Deflection Temperature at 1.8 MPa (264psi)	ASTM D648	428	°F	220	°C
DIMENSIONAL					
Molding Shrinkage	MCAM method	-0.007	%	-0.007	%
TYPICAL SHELF LIFE					
At 73°F (23°C)	MCG method	30	days	30	days
< 0°F (-18°C)	MCG method	180	days	180	days

STORAGE PROCEDURE

- 1) Store cool place if it is used within the shelf life and avoid being exposed to sunlight.
- 2) Store the material in the freezer unless it is used within the shelf life.
- 3) The material should be stored in the original plastic bag. Close the bag tightly by zip tie.

CF Forged Bulk Compound materials are lightweight and, when molded, parts have high stiffness. Specific modulus is higher than common lightweight metals. CF Forged Bulk Compound has good environmental resistance; However, UV light may change color of the parts. If the part is exposed to direct sunlight regularly, some kind of UV light protection is recommended to prevent color change.

CF Forged Bulk Compound is an epoxy resin base snap cure material. CF Forged Bulk Compound doesn't generate excessive heat which often makes delamination in thick molded parts though it cures in short cure time. The material is suitable for molding thick parts.

- Excellent formability to mold complex geometry

The molded parts of CF Forged Bulk Compound can be used as stock shape to machine complex geometry with tight dimensional tolerance.



Forged Bulk Compound machined part

Processing Guidelines

Molding pressure;	750 – 1450 psi (5 - 10 MPa)
Mold Temperature;	285 – 310 °F (140 – 155 °C)
Cure time;	10 minutes for 1" (25.4mm) thick part @ 310 °F (155 °C)
Minimum parts thickness	0.16" (4 mm) Good for thicker parts.

Metal Mold with tight shear edge and appropriate ejector system is recommended. Vacuum assist molding is recommended.

Must use external mold release for epoxy resin is recommended.

Consolidation of CF BMC before charging into the mold and large mold coverage (such as 75% or larger) are recommended.

Cure times shown left is typical value. It may vary upon molding conditions and parts geometry. It is recommended to determine the optimum molding condition by molding test in advance.

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¹ Does not represent actual testing conducted by MCG but is an estimated rating based on available data.