

Trizod™ MG500

10% Glass-reinforced Polycarbonate Shapes

Product Description

Glass-reinforced polycarbonate is effective in designs where metals, particularly die-cast aluminum and zinc, are commonly used. The addition of glass fibers to polycarbonate increases tensile strength, stiffness, compressive strength, and lower the thermal expansion coefficient. The greater the amount of glass fiber added to the polycarbonate, the greater the effect on each property will be. The coefficient of thermal expansion is reduced by nearly 75%, thus equaling that of some metals. While glass-reinforced PC has less impact strength than standard grades, it is still tougher and more impact resistant than most other plastics and die cast aluminum.

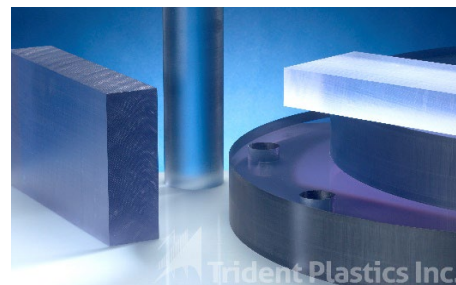
Trizod™ MG500 is a 10% glass-reinforced polycarbonate. This 10% glass-reinforced material demonstrates higher strength, rigidity, creep strength and dimensional stability than unfilled Polycarbonate. These properties and good fatigue strength make Trizod™ MG500 polycarbonate material suitable for use in parts that are exposed to high static loads over long periods in high temperature conditions.

Characteristics

- Good impact resistance
- Excellent dimensional stability
- Increased mechanical properties
- Superior electrical properties
- Excellent heat resistance
- UL flame rated

Applications

- Aerospace
- Electrical / Electronics
- Automotive / Transportation
- Manifolds & Fixtures
- Instrument components
- Structural applications



General

Annealed Plate: .250 through 4.00" thick

Plate sizes: 24x48 • 48x96

Agency ratings: ASTM D3935 PC0120G10A00000

Standard color: Black • Natural

Physical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.27		1.440	g/cm ³	ASTM D792
Water Absorption					ASTM D570
24 hr, 73°F	0.12	%	0.12	%	ASTM D570
Saturation, 73°F	0.31	%	0.31	%	
Outdoor Suitability	f2		f2		UL746A
Mechanical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	9570	psi	66	Mpa	ASTM D638
Tensile Strength (Break)	7980	psi	55	Mpa	ASTM D638
Tensile Elongation (Yield)	8	%	8.00	%	ASTM D638
Tensile Elongation (Break)	15	%	15.00	%	ASTM D638
Flexural Modulus (1.97 in Span)	499000	psi	3443	Mpa	ASTM D790
Flexural Strength (Yield, 1.97 in Span)	14900	psi	103	Mpa	ASTM D790

Trizod™ MG500

10% Glass-reinforced Polycarbonate Shapes

Impact	Nominal Value Unit	Nominal Value Unit	Test Method
Notched Izod Impact (73°F)	2 ft-lb/in	107 J/m	ASTM D256
Unnotched Izod Impact (73°F)	40 ft-lb/in	2136 J/m	ASTM D4812
Gardner Impact (73°F)	894 in-lb	101 J	ASTM D3029
Tensile Impact Strength ⁵	74.7 ft-lb/in ²	157 kJ/m ²	ASTM D1822
Hardness	Nominal Value Unit	Nominal Value Unit	Test Method
Rockwell Hardness	124 R scale	124 R scale	ASTM D785
	85 M scale	85 M scale	ASTM D785
Thermal	Nominal Value Unit	Nominal Value Unit	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi, Unannealed, 0.252 in	295 °F	146 °C	ASTM D1525 ⁶
264 psi, Unannealed, 0.252 in	288 °F	142 °C	ASTM E831
Vicat Softening Temperature	309 °F	154 °C	ASTM D1525 ⁶
CLTE - Flow (-40 to 203°F)	1.80E-05 in/in/°F	2.2E-05 m/cm/°C	ASTM E831
Specific Heat	0.289 Btu/lb/°F	1210 J/kg/°C	ASTM C351
Thermal Conductivity	1.4 Btu-in/hr/ft ² /°F	0.2 W/m/K	ASTM C177
RTI Elec	266 °F	130 °C	UL 746B
RTI Imp	266 °F	130 °C	UL 746B
RTI Str	266 °F	130 °C	UL 746B
Electrical	Nominal Value Unit	Nominal Value Unit	Test Method
Volume Resistivity	> 1.0E+17 ohms-cm	> 1.0E+17 ohms-cm	ASTM D257
Dielectric Strength (0.126 in, in Air)	450 V/mil	18 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.1	3.1	
50 kHz	3.1	3.1	
1 MHz	3.05	3.05	
Dissipation Factor			ASTM D150
50 Hz	8.00E-04	8.00E-04	
60 Hz	8.00E-04	8.00E-04	
1 MHz	7.50E-03	7.50E-03	
Arc Resistance ⁷	PLC 7	PLC 7	ASTM D495
Comparative Tracking Index (CTI)	PLC 3	PLC 3	UL 746A
High Amp Arc Ignition (HAI) ⁸	PLC 4	PLC 4	UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 4	PLC 4	UL 746A
Hot-wire Ignition (HWI)	PLC 1	PLC 1	UL 746A
Flammability	Nominal Value Unit	Nominal Value Unit	Test Method
Flame Rating			UL 94
0.06 in	V-0	V-0	UL 94
0.12 in	5-VA	5-VA	UL 94

Trizod™ MG500

10% Glass-reinforced Polycarbonate Shapes

Chemical Resistance

Trizod™ Polycarbonate

Acetone	Not resistant	Hydrochloric acid, aqueous solution 36'	Limited Resistance
Ammonia solution 10%	Not resistant	Hydrofluoric acid, 10%	Resistant
Benzene	Not resistant	Isopropanol	Resistant
Boric acid, aqueous solution 10%	Resistant	Methanol	Not resistant
Diesel oil	Resistant	Nitric acid, aqueous solution 10%	Resistant
Ethanol, 96%	Limited Resistance	Silicone Oil	Resistant
Ethylene chloride	Not resistant	Sulphuric acid, aqueous solution 2%	Resistant
Formaldehyde, aqueous solution 30%	Resistant	Sulphuric acid, concentrated 98%	Not resistant
Glycerin	Resistant	Triethanolomine	Not resistant
Glycol	Resistant	Trichloroethylene	Not resistant

* This information is based on average resin value specifications and is only to assist and advise you on the current technical knowledge, it is given without obligations or liability.

Standard sizes and approximate weight (lbs) per sheet

Thickness (inches)	Lbs / Sq Ft	6 x 6	6 x 12	6 x 48	12 x 24	12 x 48	24 x 48	48 x 96
.250"	1.65	--	--	--	--	6.60	13.20	52.80
.312"	2.08	--	--	--	--	8.32	16.63	66.53
.375"	2.48	--	--	--	--	9.90	19.80	79.20
.500"	3.30	--	--	--	--	13.20	26.40	105.60
.625"	4.13	1.03	2.06	8.25	8.25	16.50	33.00	132.00
.750"	4.95	1.24	2.48	9.90	9.90	19.80	39.60	158.40
.875"	5.78	1.44	2.89	11.55	11.55	23.10	46.20	184.80
1.00"	6.60	1.65	3.30	13.20	13.20	26.40	52.80	211.20
1.125"	7.43	1.86	3.71	14.85	14.85	29.70	59.40	237.60
1.25"	8.25	2.06	4.13	16.50	16.50	33.00	66.00	264.00
1.50"	9.90	2.48	4.95	19.80	19.80	39.60	79.20	316.80
1.75"	11.55	2.89	5.78	23.10	23.10	46.20	92.40	369.60
2.00"	13.20	3.30	6.60	26.40	26.40	52.80	105.60	422.40
2.250"	14.85	3.71	7.43	29.70	29.70	59.40	118.80	475.20
2.500"	16.50	4.13	8.25	33.00	33.00	66.00	132.00	528.00
2.750"	18.15	4.54	9.08	36.30	36.30	72.60	145.20	
3.00"	19.80	4.95	9.90	39.60	39.60	79.20	158.40	
3.250"	21.45	5.36	10.73	42.90	42.90	85.80	171.60	
3.500"	23.10	5.78	11.55	46.20	46.20	92.40	184.80	
4.00"	26.40	6.60	13.20	52.80	52.80	105.60	211.20	
4.500"	29.70	7.43	14.85	59.40	59.40	118.80	237.60	

