Technical Data

Trizod™ MG3413

30% Glass-reinforced Polycarbonate

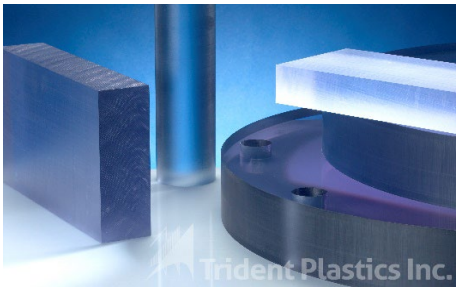
Product Description

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™ MG3413 is a 30% glass-reinforced polycarbonate. This 30% glass-reinforced material demonstrates higher strength, rigidity, creep strength and dimensional stability than unfilled Polycarbonate. These properties and good fatigue strength make Trizod™ MG3413 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 5.00" thick Plate sizes: 24x48 • 48x96

Agency ratings: ASTM D3935 PC0120G30A00000

Standard color: Black • White • Natural

Physical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.052	lb/in^3	1.440	g/cm^3	ASTM D792
Water Absorption, Immersion at 73°F (23°C):					ASTM D570
24 hr, 73°F	0.14	%	0.14	%	
Saturation, 73°F	0.26	%	0.26	%	

Mechanical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Tensile Strength [3] (Break)	14400	psi	99	Mpa	ASTM D638
Tensile Elongation [3] (Break)	2	%	2.00	%	ASTM D638
Flexural Modulus [4] (1.97 in Span)	959000	psi	6617	Mpa	ASTM D790
Flexural Strength [4] (Yield, 1.97 in Span)	22200	psi	153	Mpa	ASTM D790

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)	21	ft·lb/in	1121	J/m	ASTM D4812
Gardner Impact (73°F)	44.3	in·lb	5	J	ASTM D3029
Tensile Impact Strength [5]	31.9	ft·lb/in^2	67	kJ/m^2	ASTM D1822

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Hardness	Nominal Value	Unit	Nominal Value	Unit	Test Method
Rockwell Hardness	120	R scale	120	R scale	ASTM D785
	92	M scale	92	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	304	°F	151	ºC	ASTM D1525 [6]
264 psi, Unannealed, 0.252 in	295	°F	146	ºC	ASTM E831
Vicat Softening Temperature	329	°F	165	ºC	ASTM D1525 [6]
CLTE - Flow (-40 to 203°F)	1.20E-05	in/in/°F	2.2E-05	cm/cm/°C	ASTM E831
Specific Heat	0.27	Btu/lb/°F	1130	J/kg/°C	ASTM C351
Thermal Conductivity	1.5	Btu·in/hr/ft²/°F	0.22	W/m/K	ASTM C177
RTI Elec	248	°F	120	ºC	UL 746B
RTI Imp	248	°F	120	ºC	UL 746B
RTI Str	266	°F	130	ºC	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)	470	V/mil	19	kV/mm	ASTM D149
Dielectric Constant					ASTM D150
60 Hz	3.35		3.35		
50 kHz	3.35		3.35		
1 MHz	3.31		3.31		
Dissipation Factor					ASTM D150
50 Hz	1.10E-03		1.10E-03		
60 Hz	1.10E-03		1.10E-03		
1 MHz	7.00E-03		7.00E-03		
Arc Resistance [7]	PLC 7		PLC 7		ASTM D495
Comparative Tracking Index (CTI)	PLC 5		PLC 5		UL 746A
High Amp Arc Ignition (HAI) [8]	PLC 4		PLC 4		UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 3		PLC 3		UL 746A
Hot-wire Ignition (HWI)	PLC 0		PLC 0		UL 746A
Flammability	**Nominal Value**	**Unit**	**Nominal Value**	**Unit**	**Test Method**
Flame Rating					UL 94
0.030 in	HB		HB		UL 94
0.06 in	V-1		V-1		UL 94
0.12 in	V-0		V-0		UL 94

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Chemical Resistance

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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"	1.87	--	--	--	--	7.49	14.98	59.92
.312"	2.36	--	--	--	--	9.44	18.87	75.50
.375"	2.81	--	--	--	--	11.24	22.47	89.88
.500"	3.75	--	--	--	--	14.98	29.96	119.84
.625"	4.68	1.17	2.34	9.36	9.36	18.73	37.45	149.80
.750"	5.62	1.40	2.81	11.24	11.24	22.47	44.94	179.76
.875"	6.55	1.64	3.28	13.11	13.11	26.22	52.43	209.72
1.00"	7.49	1.87	3.75	14.98	14.98	29.96	59.92	239.68
1.125"	8.43	2.11	4.21	16.85	16.85	33.71	67.41	269.64
1.25"	9.36	2.34	4.68	18.73	18.73	37.45	74.90	299.60
1.50"	11.24	2.81	5.62	22.47	22.47	44.94	89.88	359.52
1.75"	13.11	3.28	6.55	26.22	26.22	52.43	104.86	419.44
2.00"	14.98	3.75	7.49	29.96	29.96	59.92	119.84	479.36
2.250"	16.85	4.21	8.43	33.71	33.71	67.41	134.82	539.28
2.500"	18.73	4.68	9.36	37.45	37.45	74.90	149.80	599.20
2.750"	20.60	5.15	10.30	41.20	41.20	82.39	164.78	
3.00"	22.47	5.62	11.24	44.94	44.94	89.88	179.76	
3.250"	24.34	6.09	12.17	48.69	48.69	97.37	194.74	
3.500"	26.22	6.55	13.11	52.43	52.43	104.86	209.72	
4.00"	29.96	7.49	14.98	59.92	59.92	119.84	239.68	
4.500"	33.71	8.43	16.85	67.41	67.41	134.82	269.64	