



THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

ELECTRONICS MATERIAL COMPARATIVE DATA SHEET

Product Grades			TGC	Angles & Channels GPO-3	GPO-3	N220	G-10	G-11	G-15	FR4	Arboron	CE	Poly-carbonate GP	Poly- carbonate V-0	Propellis	PolyPro FR	PolyPro EV	Nomex®	G-Flex YT510	PET Electrical Grade	Mica M	
			NEMA	--	GPO-3	GPO-1	G-10	G-11	G-15	FR4	--	CE	--	--	--	--	--	--	--	--	--	--
			IEC	--	UPGM 203	UPGM 201	EPGC 201	EPGC 203	PIGC 301	EPGC 202	--	PFCP 202	--	--	--	--	--	--	--	--	--	--
Materials of Construction			Glass Polyester	Glass Polyester	High-Temp Glass Polyester	Glass Epoxy	High-Temp Glass Epoxy	Glass Polyimide	Flame Retardent Glass Epoxy	Paper Phenolic with Melamine Face	Canvas Phenolic	Thermo-plastic	Flame Retardent Thermo-plastic	Woven glass fabric with high temperature epoxy	Flame Retardent Thermo-plastic	Polypropylene based insulating film	High-Temp Aramid Paper	Meta-Aramid Paper	Polyester Film	Silicone Bonded Mica Paper		
Standard Sizes - other sizes available at request		in	120 Long	36 x 72 48 x 96	36 x 72 48 x 96	30 x 48 60 x 48 48 x 120	48 x 96 48 x 110 48 x 125	48 x 48 48 x 96	36 x 48 48 x 96 48 x 120	48 x 96 60 x 120 60 x 144	36 x 72 48 x 96	36 x 72 48 x 96	48 x 96 76 x 96	36 - 50 rolls	24 wide rolls 48 x 96	48 rolls	36 wide rolls	--	Rolls slit to width	41 x 98		
		cm	305 Long	91 x 182 121 x 243	91 x 182 121 x 243	76 x 122 122 x 152 122 x 305	122 x 244 122 x 280 122 x 317	122 x 122 122 x 244	91 x 182 121 x 243 121 x 304	121 x 243 152 x 304 152 x 365	91 x 182 121 x 243	91 x 182 121 x 243	121 x 243 193 x 243	91 - 127 rolls	61 wide rolls 122 x 244	122 rolls	91 wide rolls	--	Rolls slit to width	104 x 248		
Standard Thickness Range		in	0.125 - 0.375	0.094 - 2.00	0.031 - 2.00	0.006 - 5	0.010 - 5	0.016 - 3.50	0.010 - 6.00	0.125 - 1.00	0.008 - 4.00	0.031 - 0.50	0.031 - 0.50	0.005 - 0.013	0.010 - 0.125	0.005 - 0.030	0.002 - 0.030	0.002 - 0.03	0.005 - 0.014	0.004 - 3.00		
		cm	0.318 - 0.953	0.239 - 5.080	0.079 - 5.080	0.015 - 12.70	0.025 - 12.70	0.41 - 88.9	0.025 - 15.240	0.318 - 2.540	0.020 - 10.160	0.079 - 1.270	0.079 - 1.270	0.013 - 0.033	0.025 - 0.318	0.013 - 0.076	0.005 - 0.076	0.005 - 0.076	0.013 - 0.036	0.010 - 7.620		
Mechanical Properties		Test Method	Units																			
Rockwell Hardness		ASTM D-785	M scale	100	100	100	98	115	117	98	113	100	100	70	--	--	92	--	--	--	--	
Tensile Strength	LW	ASTM D-638	ksi	12.5	9	11	43	41	48	40	22	11	9.5	9.5	21	4.4	5.2	0.3	0.06	2	22	
	CW	ASTM D-638	ksi	--	--	--	39	--	40	32	14	9	9.5	9.5	15	4.4	--	0.3	0.02	2	--	
Compressive Strength		ASTM D-695	ksi	29.5	33	32	44	50	>60	66	45	34	12.5	12.5	15	--	6	--	--	--	58	
Flexural Strength	LW	ASTM D-790	ksi	25	23	21	63	80	>78	65	30	17.5	13.5	13.5	--	5.9	7	--	--	--	24	
	CW	ASTM D-790	ksi	--	20	--	54	70	>73	52	24	15	13.5	13.5	--	5.9	--	--	--	--	--	
Shear Strength		ASTM D-732	ksi	--	14	12	19	21	>20	21.5	13	14	10	10	--	--	--	--	--	--	--	
Izod Impact Strength LW		ASTM D-256	ft-lb/in	9.6	9	11	8.4 ¹	18	>17	7.9	0.5	1.95	15	2.4	--	1.2	1.9	--	--	--	--	
Bonding Strength		ASTM D-229	ksi	--	1.4	1.2	2.3	2.2	>2.0	2.3	0.66	1.7	--	--	--	--	--	--	--	--	--	
Electrical Properties		Test Method	Units																			
Arc Resistance		ASTM D-495	Sec	>180	190	180	130	185	>180	130	88	15	--	--	--	--	160	--	--	--	420	
Dielectric Strength		ASTM D-149	VPM	225	450	550	485	485	>450	800	129	550	400	400	1000	2200	2000	1000	406	--	625	
Breakdown Voltage		ASTM D-149	kV	45	45	50	47 ²	>50	>50	66	60	40	--	--	7.1	22	20	--	0.81	7.5	--	
Comparative Tracking Index		UL-746	V	>600	>600	>600	>200	>180	>375	>230	>600	--	--	>175	--	>600	--	--	--	2	500	
Physical Properties		Test Method	Units																			
Water Absorption		ASTM D-570	%	0.25	0.25	0.25	0.13	0.01	<0.16	0.1	0.9	2	0.15	0.15	--	0.01	0.01	10	--	0.6	1	
Specific Gravity		ASTM D-792	lbs/in ³	0.7	0.7	0.6	0.6	0.7	1.81	0.7	0.5	0.5	0.4	0.4	1.36	0.4	0.91	0.4	0.028	0.5	0.8	
Thermal Properties		Test Method	Units																			
Relative Temp. Index	Electric	UL-746B	°C	130	130	220	130	130	--	130	95	125	125	125	155	110	110	220	210	140	500	
	Mechanical	UL-746B	°C	130	130	210	140	140	200	140	95	125	125	125	155	110	110	220	--	120	500	
Flame Resistance		UL94	--	V-0	V-0	HB	HB	HB	HB	V-0	V-0	HB	V-2	V-0	HB	V-0	HB	V-0	VTM-0	VTM-2	V-0	
Thermal Class		NEMA	--	B	B	R	B	F	R	B	--	A	A	A	--	A	--	R	--	A	R	

¹: Material Property Cond. D48/50 at 3 mm Notched

²: Material Property Cond. A at 3 mm