



THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

TRANSFORMER MATERIAL COMPARATIVE DATA SHEET

Product Grade	The Gund Co	Kraft Paper	S2S Hardboard	Pressboard HD	Pressboard LD	Ranprex Laminated Wood	HP1 Low Power Factor	G-10	G-11H	Threaded Rods & Nuts	Nomex 410	G-Flex™ Meta-Aramid Paper YT510	Dogbone (Rod) NTR N155/N220	GPO-3	U205	AP0-1	N155	N220	Filament Wound Tube	Standoff Insulators
	NEMA	--	--	--			HP1	G-10	G-12	--	--	--	--	GPO-3	GPO-5	GPO-1	GPO-1	GPO-1	--	--
	IEC	--	--	IEC 60641-3-1, Type B 3.1A	IEC 60641-3.1, Type B.2.1.A		--	EPGC 201	EPGC 308	--	--	--	--	UPGM 203	UPGM 205	UPGM 202	UPGM 201	UPGM 201	--	--
Construction		Cellulose Paper	Cellulose Board (Compressed Wood Fiber)	Cellulose Board	Cellulose Board	Compressed Wood Veneers	Paper Phenolic	Glass Epoxy	Glass Epoxy	Glass Polyester	Aramid Paper	Aramid Paper	High Temp Pultruded Glass Fiber	Glass Polyester	Glass Polyester	Glass Polyester	High- Temp Glass Polyester	High- Temp Glass Polyester	Glass Epoxy	Glass Polyester
Standard Thickness	in	0.008 - 4.000	0.125 0.187 0.220	0.008 - 4.000	0.04 - 0.125	0.393 - 4.724	0.125 - 2.000	0.006 - 5.00	0.006 - 5.00	-	0.002 - 0.03	0.002 - 0.03	-	0.118 - 2.000	0.118 - 2.362	0.031 - 2.000	0.031 - 2.000	0.031 - 2.000	-	-
	mm	0.2 - 101.6	3.00 4.75 5.60	0.2 - 101.6	1.0 - 3.0	10 - 120	3.18 - 50.8	0.15 - 127	0.15 - 127	M10 - 1.5 - M20 - 2.5	0.05 - 0.76	0.05 - 0.76	-	3 - 50.8	3 - 60	0.79 - 50.8	0.79 - 50.8	0.79 - 50.8	-	-
Mechanical Properties	Units																			
Tensile Strength, Lengthwise	ksi	14	6.6	18	13.0	--	21	--	42	41	12 ¹	12 ¹	60	9	21.75	9.5	12	11	--	5.6
Compressive Strength	ksi	30	12.7	30	--	75	45	--	70	70	--	--	45	33	60	33	40	32	20	21.3
Flexural Strength, LW	ksi	20	6.2	20	--	160	33	63	80	80	--	--	80	23	37.7	20	26	32	--	12.8
Shear Strength	ksi	12.8	6.4	12.8	--	--	--	19	21	21	--	--	3	13	--	13	--	12	--	--
IZOD Impact Strength, LW	ft.-lbs./in.	--	1.6	--	--	41	2	8.4 ¹	11	--	--	--	40	9.3	54.72	8.5	9.5	11.0	--	4.68
Electrical Properties	Units																			
Arc Resistance	Seconds	--	--	--	--	--	--	130	--	--	--	--	180	192	--	180	150	180	--	--
Dielectric Strength	⌊ V/mil	700	362	965	825	7000 - 20000	680	485	485	485	460 ³	406 ³	--	550	331	450	450	550	250	254
Breakdown Voltage	⌋ kV	40	44	40	--	>80	45	47 ²	>50	>45	--	0.81	70	50	38	>40	30	50	--	--
Physical Properties	Units																			
Specific Gravity	lb./in. ³	--	0.125	0.0420	0.0380	0.025 - 0.050	0.0545	0.067	0.069	0.069	0.026	0.028	1.9	0.065	1.9	0.066	0.066	0.061	0.065 - 0.72	1.9
Thermal Properties	Units																			
Relative Temperature Index	°C	105	105	105	--	105	105	130	180	180	220	210	155 - 220	130	155	130	155	210	130 - 180	32
Flame Resistance	Class	UL 94 HB	--	UL 94 HB	--	--	--	UL 94 HB	UL 94 HB	UL 94 V-0	UL 94 V-0	VTM 0	--	UL 94 V-0	UL 94 V-0	UL94 HB	UL 94 V-0	E323105	UL 94 HB	UL 94 V-0

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

² : Material Property Cond. A at 3 mm

³: Material property at 2mil thickness

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