

GENERAL ENGINEERING MATERIALS

			Noryl EN265	Noryl SE-1 GFN3	Acetron GP Acetal	Delrin Acetal	Delrin 570 Blend	25% Glass- Filled Acetal Copolymer	Delrin AF Filled Acetal	Acetron NS Filled Acetal	Delrin 500 CL	Ertalyte PET-P	Hydex 4101 PBT	Hydex 4101L Filled PBT			
		Units	Modified Polyphenylene Oxide	30% Glass Filled Polyphenylene Oxide	Poly- oxymethylene Copolymer	Poly- oxymethylene Homopolymer	20% Glass Filled POM Homopolymer	25% Glass Filled POM Copolymer	PTFE Filled POM Homopolymer	Lubricated POM Copolymer	Lubricated POM Homopolymer	Polyethylene- terephthalate	Polybutylene- terephthalate	PTFE Filled Polybutylene- terephthalate			
MECHANICAL	1	Strength to Weight Ratio	ksi	-	-	-	-	-	-	-	-	-	-	-			
	2	Specific Gravity @ 73 F	-	D792	1.06	1.36	1.41	1.41	1.56	1.59	1.50	1.44	1.42	1.41	1.31	1.36	
	3	Tensile Strength @ 73 F, (ult)/(yld)	psi	D638	9600 (ult)	17800 (ult)	9500 (ult)	11000 (ult)	8500 (ult)	16000 (yld)	8000 (ult)	7500 (ult)	9500 (yld)	12400 (ult)	7500 (yld)	7200 (yld)	
	4	Tensile Modulus of Elasticity @ 73 F	psi	D638	350000	1000000	400000	450000	900000	1200000	435000	400000	450000	460000	377000	380000	
	5	Tensile Elongation at Break @ 73 F	%	D638	30	4	30	30	12	2-3%	15	10	40	20	200	40	
	6	Flexural Strength @ 73 F	psi	D790	13500	20000	12000	13000	10700	-	12000	15000	13000	18000	12000	-	
	7	Flexural Modulus of Elasticity @ 73 F	psi	D790	360000	1100000	400000	450000	730000	1050000	445000	400000	400000	490000	420000	390000	
	8	Shear Strength @ 73 F	psi	D732	-	-	8000	9000	-	-	7600	6000	-	8000	-	-	
	9	Compressive Strength, (% Deformation) @73 F	psi	D695	-	-	15000 (10)	16000 (10)	-	-	16000 (10)	15000 (10)	4500 (1)	15000 (10)	12800 (10)	-	
	10	Compressive Modulus of Elasticity @ 73 F	psi	D695	-	-	400000	450000	-	-	350000	315000	-	420000	-	-	
	11	Hardness, Rockwell, Scale as noted @73 F	-	D785	(R119)	(L108)	M88 (R120)	M89 (R122)	M90 (R118)	M80	M85 (R115)	M85 (R116)	M90 (R120)	M93 (R125)	M72	-	
	12	Hardness, Durometer, Shore D @73 F	-	D2240	-	-	D85	D86	-	-	D83	D83	-	D87	-	-	
	13	Izod Impact, (Notched) @73 F	ft-lb/in of notch	D256 TypeA	5.0	2.3	1.0	1.0	0.8	1.1	0.7	0.7	1.4	0.5	1.0	0.7	
	14	Coefficient of Friction, (Dry vs. Steel) Dynamic	-	-	0.39	0.27	0.25	0.25	0.34	-	0.19	0.20	-	0.20	-	-	
	15	Limiting PV, (with 4 to 1 factor of safety applied)	psi-ft/min	-	-	-	2700	2700	-	-	7500	7500	-	3160	-	-	
THERMAL	16	Coefficient of Linear Thermal Expansion @73 F	in/in/F	E-831 (TMA)	3.3E-05	1.4E-05	5.4E-04	4.7E-05	4.5E-05	2.2E-05	5.0E-05	4.7E-05	6.8E-05	3.3E-05	7.8E-05	-	
	17	Heat Deflection Temperature @ 264 psi	F	D648	265	275	220	250	316	322	244	250	257	240	200	195	
	18	Tg-Glass transition temperature, (Amorphous)	F	D3418	-	-	-	-	-	-	-	-	-	-	-	-	
	19	Melting Point, (VS=Vicat Softening Temp.)	F	D3418	310	330	335	347	347	-	347	347	347	491	428	-	
	20	Continuous Service Temperature in Air, (Max.)	F	-	221	221	180	180	185	-	180	180	-	210	221	221	
ELECTRICAL	21	Thermal Conductivity	BTU-in/hr-ft2-F	-	1.32	-	1.60	2.50	-	-	-	-	2.00	1.46	-		
	22	Dielectric Strength, Short Term	Volts/mil	D149	500	530	420	450	490	-	400	350	400	385	400	-	
	23	Volume Resistivity	ohm-cm	D257	1.0E+17	1.0E+17	1.0E+15	1.0E+15	5.0E+14	-	3.0E+16	1.0E+15	1.0E+15	5.5E+14	1.0E+16	-	
	24	Dielectric Constant @ 10E6 Hz	-	D150	-	-	3.8	3.7	-	-	3.1	-	3.5	-	-	-	
	25	Dissipation Factor @ 10E6 Hz	-	D150	-	-	0.005	0.005	0.006	-	0.010	-	0.006	-	0.001	-	
	26	Flammability @ 3.1 mm unless noted	-	UL94	V-O(5.9mm)	V-O(5.9mm)	HB	HB	HB	-	HB	HB	HB (.78mm)	HB	HB	-	
	H ₂ O	27	Water Absorbtion, Immersion, 24 Hrs	% by wt.	D570(7)	0.07	0.06	0.20	0.20	0.25	0.29	0.20	0.20	0.27	0.07	0.08	0.07
		28	Water Absorbtion, Saturation	% by wt.	D570(7)	0.20	-	0.90	0.90	1.00	-	1.0	0.90	1.00	0.90	0.50	-