

CHEMICAL RESISTANT MATERIALS

			Kynar 740	Kynar 2850	Halar	KEL-F	Virgin Teflon	25% Glass Reinforced Teflon	Fluorosint 207	Fluorosint 500	Semitron ESD500	Tectron PPS	40% Glass Filled Ryton PPS	40% Glass Filled Ryton PPS		
			Extruded Polyvinylidene Fluoride	Extruded Polyvinylidene Fluoride	Extuded Ethylenechloro- trifluoroethylene	Polychloro- trifluoro- ethylene	Polytetrafluoro- ethylene	25% Glass Filled Polytetrafluoro- ethylene	FDA Synthetic Mica-Filled PTFE	Synthetic Mica-Filled PTFE	Electrostatic Dissapative PTFE	Compression Molded PPS	Compression Molded 40% GF PPS	Injection Molded R-4		
			Units	ASTM Test Method												
MECHANICAL	1	Strength to Weight Ratio	ksi	-												
	2	Specific Gravity @ 73 F	-	D792	1.77-1.79	1.76-1.78	1.68	2.08-2.19	2.16	2.22	2.30	2.32	2.30	1.35	1.70	1.67
	3	Tensile Strength @ 73 F, (ult)/(yld)	psi	D638	7000 (yld)	5000 (yld)	4300 (yld)	5700 (ult)	4500 (ult)	2800 (ult)	1500	1100	1500	10000 (ult)	13000 (ult)	22000 (ult)
	4	Tensile Modulus of Elasticity @ 73 F	psi	D638	250000	125000	240000	220000	-	-	250000	300000	250000	325000	730000	2200000
	5	Tensile Elongation at Break @ 73 F	%	D638	50-250	300-400	250	140	400	325	50	10	50	5.0	2.0	1
	6	Flexural Strength @ 73 F	psi	D790	8000	-	6800	8500	-	-	2000	2200	2200	18000	23000	29500
	7	Flexural Modulus of Elasticity @ 73 F	psi	D790	250000	170000	245000	190000	50000-90000	-	350000	500000	350000	370000	1000000	2100000
	8	Shear Strength @ 73 F	psi	D732	-	-	-	-	-	-	1700	2100	1700	-	-	13000
	9	Compressive Strength, (% Deformation) @73 F	psi	D695	10000 (10)	-	-	5500 (10)	600 (1)	1000 (1)	3800 (10)	4000 (10)	3800 (10)	18000 (10)	24000 (10)	26000 (10)
	10	Compressive Modulus of Elasticity @ 73 F	psi	D695	-	-	-	170000	-	-	225000	250000	225000	410000	1300000	-
	11	Hardness, Rockwell, Scale as noted @73 F	-	D785	-	-	(R90)	(S80)	-	-	(R50)	(R55)	(R50)	M93(R125)	M94(R125)	(R123)
	12	Hardness, Durometer, Shore D @73 F	-	D2240	D78	D70	D75	D75	D55	D54	D65	D70	D65	D85	D86	-
	13	Izod Impact, (Notched) @73 F	ft-lb/in of notch	D256 TypeA	3.0	6-10	No Break	1.5	3.0	-	1.0	0.9	1.0	0.6	1.0	1.7
	14	Coefficient of Friction, (Dry vs. Steel) Dynamic	-	-	-	-	-	0.18	.05-.08	.10-.13	0.17	0.18	0.17	0.40	-	-
	15	Limiting PV, (with 4 to 1 factor of safety applied)	psi-ft/min	-	-	-	-	-	-	-	8000	8000	8000	-	-	-
THERMAL	16	Coefficient of Linear Thermal Expansion @73 F	in/in/F	E-831 (TMA)	6.6E-05	7.8E-05	5.6E-05	3.5E-05	7.0E-05	3-8E-05	5.7E-05	2.4E-05	5.7E-05	2.8E-05	2.5E-05	-
	17	Heat Deflection Temperature @ 264 psi	F	D648	221	104	145	167	115	-	210	270	210	250	490	500
	18	Tg-Glass transition temperature, (Amorphous)	F	D3418	-	-	-	-	-	-	-	-	-	-	-	-
	19	Melting Point, (VS=Vicat Softening Temp.)	F	D3418	-	-	437	410-420	621	621	621	621	621	540	540	-
	20	Continuous Service Temperature in Air, (Max.)	F	-	-	-	300	392	500	500	500	500	500	425	450	428
21	Thermal Conductivity	BTU-in/hr-ft2-F	-	1.18	1.11	1.09	1.80	1.70	2.60	-	5.30	-	2.00	2.10	2.10	
ELECTRICAL	22	Dielectric Strength, Short Term	Volts/mil	D149	-	-	350	500	600	-	200	275	-	540	385	450
	23	Volume Resistivity	ohm-cm	D257	2.0E+14	2.0E+14	5.5E+16	1.0E+19	>10E+18	-	>1E13	>1E14	1E11-1E13	4.5E+16	-	1.0E+16
	24	Dielectric Constant @ 10E6 Hz	-	D150	-	-	-	2.4	-	-	2.7	2.9	-	3.0	-	3.8
	25	Dissipation Factor @ 10E6 Hz	-	D150	-	-	-	0.014	-	-	0.008	0.008	-	0.001	-	0.001
	26	Flammability @ 3.1 mm unless noted	-	UL94	-	-	V-O	V-O	V-O	-	V-O	V-O	V-O	V-O	V-O	V-O/5VA
H ₂ O	27	Water Absorbtion, Immersion, 24 Hrs	% by wt.	D570(7)	0.03	0.04	0.10	0.00	0.00	-	0.03	0.10	0.03	0.01	0.02	-
	28	Water Absorbtion, Saturation	% by wt.	D570(7)	-	-	-	0.00	-	-	2.00	3.00	2.00	0.03	0.03	0.05