

Performance Plastics

	HYDLAR Z	KAPTON	PEEK	POLY SULFONE	RYTON PPS	TORLON	ULTEM	VESPEL
PHYSICAL								
SPECIFIC GRAVITY	1.16		1.32		1.3	1.51	1.27	1.36 - 1.43
WATER ABSORPTION, 24 hr. (%)	.8		0.1 - .15	.3	>0.02	0.33	0.25	0.24
MECHANICAL								
TENSILE								
Strength, Yield (10 ³ psi) @ 73°F	20.0	.207	14.5	10.2	9.5 - 12.8	22.0	15.2	10.5 - 17.1
Elongation, Ultimate (%) @ 73°F	4.0	72	30 - 150		1 - 3	15	8	8 - 10
Modulus, Yield (10 ³ psi) @ 73°F	1,300		522	360	480 - 540	700	430	300
FLEXURAL								
Strength, (10 ³ psi) @ 73°F	23.0		16.0	15.4	14.0 - 21.2	34.9	22.0	19.0 - 28.8
Modulus, Yield (10 ³ psi) @ 73°F	900		550	390	550	730	480	450 - 500
COMPRESSIVE STRENGTH								
2% Offset, (10 ³ psi)			18.0		14.0	32.1	21.9	30.0 - 40.0
IMPACT STRENGTH								
Izod, Notched (ft.-lb./in.) @ 73°F	2.7	.58	1.60	1.30	<0.5	2.7	1.0	1.5
HARDNESS			R126	R120	R123	E86	M109	M97-99
COEFFICIENT OF STATIC FRICTION								
Against self								
Against steel			0.20		.300			
THERMAL								
CONDUCTIVITY								
(BTU/Hr/Sq.Ft./Degree °F/in.)						1.8		2.3 - 2.6
COEFFICIENT OF THERMAL EXPANSION								
(10 ⁻⁵ /Degree °F)		22	2.1 - 2.4		2.7	1.7	3.1	2.5 - 2.8
SPECIFIC HEAT								
(BTU/lb./Degree °F)		1.09						
HEAT DEFLECTION TEMP.								
(Degree °F)								
At 66 psi							410	
At 264 psi	470		568 - 608		221 - 275	532	392	530 - 680
MAX. CONTINUOUS TEMP. (°F)			600			500		500 - 800
ELECTRICAL								
VOLUME RESISTIVITY								
(Ohm/cm)		1.40x 10 ¹⁷	4.9 X 10 ¹⁶	5 X 10 ¹⁶		8 X 10 ¹⁶	6.6 X 10 ¹⁷	>10 ¹⁵
DIELECTRIC STRENGTH								
(V/Mil)		6,900	480	425	380 - 410	580	831	310 - 560
DIELECTRIC CONSTANT								
At 60 HZ		3.1		3.07 - 3.03				3.6 - 4.1
At 1 MHZ						3.9		3.5 - 3.9
DISSIPATION FACTOR								
At 60 HZ				0.008 - .0034				0.002 - 0.003
At 1 MHZ		.0015				0.031	0.0013	0.004 - 0.011
ARC RESISTANCE (SECONDS)				1.22	120		126	152 - 230

