

MISCELLANEOUS

UHMW - ABS - HDPE

			PVC Gray Type I	HI-Impact Polystyrene	Poly- Propylene	ABS	Acrylite GP	Hytrel 5556	Semitron ESD225	HDPE	UltraPoly W1	Ceram-P	Ultra-Poly CL6	DX845		
	Units	ASTM Test Method	PolyVinyl- Chloride	Extruded Polystyrene	Extruded Poly- Propylene	Acrylonitrile Butadiene Styrene	Acrylic	Thermoplastic Elastomer	Static Dissapative Acetal	High Density Polyethylene	Natural UHMW-PE	Reinforced Wear Enhanced UHMW-PE	Reinforced Wear Enhanced UHMW-PE	Methylpentene Copolymer		
MECHANICAL	1	Strength to Weight Ratio	ksi	5.1	3.8	5.2	5.3	7.4	0.8	4.1	4.9	3.1	2.9	2.9	3.0	
	2	Specific Gravity @ 73 F	-	D792	1.43	1.04	0.90	1.04	1.19	1.20	1.33	0.94	0.93	0.96	0.96	0.83
	3	Tensile Strength @73 F, (ult/yld)	psi	D638	7300 (yld)	4000 (ult)	4700 (ult)	5500 (ult)	8800 (ult)	1000 (5%)	5400 (ult)	4600 (ult)	2900 (yld)	2800 (yld)	2800 (yld)	2500 (ult)
	4	Tensile Modulus of Elasticity @ 73 F	psi	D638	392000	-	130000	346000	470000	-	200000	170000	100000	131000	131000	-
	5	Tensile Elongation at Break @ 73 F	%	D638	-	50	100	20	-	560	15	55	300 (4@yld)	300	300	25
	6	Flexural Strength @73 F	psi	D790	-	-	7000	9300	14200	-	7300	1400	-	-	-	5100
	7	Flexural Modulus of Elasticity @ 73 F	psi	D790	455000	260000	180000	340000	-	30000	220000	200000	77000	100000	100000	-
	8	Shear Strength @ 73 F	psi	D732	-	-	-	-	-	-	3380	4000	-	-	-	-
	9	Compressive Strength, (%Deformation) @ 73 F	psi	D695	-	-	-	-	13700 (10)	-	8000 (10)	4570 (10)	-	-	-	-
	10	Compressive Modulus of Elasticity @ 73 F	psi	D695	-	-	-	-	-	-	175000	-	-	-	-	-
	11	Hardness, Rockwell, Scale as noted @ 73 F	-	D785	(R113)	(L56)	(R90)	(R105)	M86	-	M50 (R108)	-	(R64)	-	-	(R85)
	12	Hardness, Durometer, Shore D @ 73 F	-	D2240	D82	-	-	-	-	D55	-	D69	D68	-	D6B	-
	13	Izod Impact, (Notched) @ 73 F	ft-lb/in of notch	D256 TypeA	0.7	-	0.9	7.0	0.4	No Break	1.5	3.0	No Break	50.0	50.0	7.0
	14	Coefficient of Friction, (Dry vs. Steel) Dynamic	-	-	-	-	0.35	-	0.59	0.29	-	0.12	0.12	0.10	-	-
	15	Limiting PV, with 4 to 1 factor of safety applied	psi-ft/min	-	-	-	-	-	-	2000	-	-	-	-	-	-
THERMAL	16	Coefficient of Linear Thermal Expansion @ 73 F	in/in/F	E-831 (TMA)	-	-	5.0E-05	5.2E-05	4.0E-05	6.5E-05	9.3E-05	1.3E-04	1.1E-04	1.3E-04	1.3E-04	6.5E-05
	17	Heat Deflection Temperature @ 264 psi	F	D648	169	183	130	220	165	120	225	151	114	-	-	190
	18	Tg-Glass transition temperature, (Amorphous)	F	D3418	-	-	-	-	-	-	-	-	-	-	-	85
	19	Melting Point, (VS= Vicat Softening Temp.)	F	D3418	-	-	330	220	-	394	320	-	276	-	-	340 (VS)
	20	Continuous Service Temperature in Air, (Max.)	F	-	-	-	-	160	-	185	180	-	180	-	-	-
	21	Thermal Conductivity	BTU-in/hr-ft ² F	-	-	-	-	1.18	-	-	-	-	-	-	-	1.20
ELECTRICAL	22	Dielectric Strength, Short Term	Volts/ mil	D149	-	-	450	500	410	-	500	-	2280	-	1650	
	23	Volume Resistivity	ohm-cm	D257	-	-	1.0E+17	1.0E+15	-	1.1E+10	E9-E10	1.0E+15	-	-	>1 E16	
	24	Dielectric Constant @ 10E6Hz	-	D150	-	-	-	-	2.8	3.7	-	-	2.3-2.35	-	-	2.12
	25	Dissipation Factor @ 10E6Hz	-	D150	-	-	-	-	0.018 (60Hz)	-	-	-	500.000	-	-	-
	26	Flammability @ 3.1 mm unless noted	-	UL94	-	-	HB	HB (6.10mm)	-	HB (3.05m)	-	HB	-	-	-	HB
H2O	27	Water Absorbtion, Immersion, 24 Hrs.	% by wt	D570(7)	-	-	0.02	0.30	-	0.30	2.00	0.03	NIL	NIL	NIL	NIL
	28	Water Absorbtion, Saturation	% by wt	D570(7)	-	-	-	0.70	0.03	-	7.20	-	NIL	NIL	NIL	NIL