Properties	A.S.T.M. Test Method	Acrylic Cast	Polypropylene	Cellulose Acetate Sheet	Nylon Type 6 Cast	Nylon Type 6 Injection Moulding and Extrusion	Nylon Type 6/6 Injection Moulding and Extrusion	Polyethylene High-density	Polyethylene Low-density	Polyethylene High Molecular Weight	Polyethylene Ultra High Molecular Weight
Specific gravity	D792	1.17-1.20	0.900-0.915	1.128-1.32	1.15	1.13	1.09-1.14	0.941-0.965	0.910-0.925	.940-.942	0.93
Specific volume, cu .cm per Kg	D792	855.4-8341	1047.1-1119.2	780-755.4	868.5	884.9-875.1	920.9-875.1	1061.9-1037.3	–	1076.6	–
Refractive index nD	D542	1.48-1.50	1.49	1.49-1.50	–	–	1.53	1.54	1.51	1.54	–
Tensile strength, MPa	D638 D651	55-76	22-37	31-55	76-97	70-83	48-75	21-38	7-16	17	20
Elongation, %	D638	2.7	200-700	20-50	10-60	90-320	90	15-100	90-650	5.25	350
Modulus of elasticity in tension, 10^3kpa	D747	24.1-34.5	9.0-137.9	20.7-27.6	17.9-27.6	10.3-24.8	17.9-27.6	5.5-10.3	1.2-2.4	7.0	–
Compressive Strength, MPa	D695	76-131	59-69	124-172	97	46-67	50-90	17	–	17	–
Flexural strength, MPa	D790	83-117	–	41-69	114-121	55-110	55-95	7	–	7	172
Impact strength, ft. lb per in. of notch (12.7 x 12.7 mm notched bar, Izod test)	D256	0.4-0.5	0.6-6.0 (½"¼" BAR)	1.0-3.0	1.2-2.5	1.0-3.6	1.0	1.5-12	>16	no break	32
Hardness, Rockwell	D785	M80-M100	R85-110	R95-R120	R110-R120	R103-R18	R111-R118	D60-D70 (Shore)	D41-D46 (Shore)	R38	D66 (Shore)
Thermal conductivity (See footnote1)	C177	4-6	2.8	4.8	–	–	5.2-5.8	11-12.4	8.0	11-12.4	Non con
Specific heat, cal per °C. per gm.	–	0.35	0.46	0.3-0.5	–	–	0.4	0.55	0.55	0.55	0.55
Thermal expansion, 10^5 per °C.	D696	5.9	6-8.5	10-15	9.0	8-13	10-15	11-13	16-18	7.2	2×10^{-4}
Resistance to heat °C (continuous)	–	60-93	121-160	60-104	177	79	132-149	121	100	121	–
Heat distortion temp., °C	D648	66-99	99-104	54-71	210-216 (455 kPa)	127-171 (455 kPa)	149-182 (455 kPa)	60-82 (455 kPa)	41-49 (455 kPa)	73	–
Volume resistivity (see footnote 2)	D257	$>10^{15}$	6.5×10^{16}	10^{11}-10^{13}	–	10^{12}-10^{15}	$(0.45\text{-}4) \times 10^{14}$	10^{15}-10^{16}	$>10^{16}$	$>10^{16}$	$>10^{15}$
Dielectric strength (See footnote 3)	D149	450-550	500-660	250-300	380	440-510	385-470	450-500	460-700	710	900
Dielectric strength (See footnote 4)	D149	350-400	650	–	340	320-440	340-410	440-600	420-700	680	–
Dielectric constant, 60 cycles	D150	3.5-4.5	2.25	4.7	4.0	5.0-14.0	4.1-4.6	2.25-2.35	2.25-2.35	2.25-2.35	–
Dielectric constant, 10^3 cycles	D150	3.0-3.5	2.25	4.5	3.8	4.9-10.1	4.0-4.5	2.25-2.35	2.25-2.35	2.25-2.35	–
Dielectric constant, 10^6cycles	D150	2.2-3.2	2.0-2.25	4.4	3.3	4.0-4.7	3.4-3.5	2.25-2.35	2.25-2.35	2.30	–
Dissipation (power) factor, 60 cycles	D150	0.05-0.06	0.0005	0.018	0.15	0.06-0.10	0.014-0.04	<0.0005	<0.0005	0.0005	–
Dissipation (power) factor, 10^3 cycles	D150	0.04-0.06	0.0002-0.0008	0.022	.02	0.06-0.11	0.02-0.04	<0.00021	<0.0005	0.00021	–
Dissipation (power) factor, 10^6 cycles	D150	0.02-0.03	0.0001-0.0005	0.051	.05	0.04-0.13	0.03-0.04	<0.0003	<0.0005	0.0002	–
Arc resistance, sec.	D495	No track	185	180-200	–	–	130-140	–	135-160	–	–
Water absorption, 24hr., 3.2mm thickness, %	D570	0.3-0.4	<0.01	2.0-4.5	.06	1.9-3.3	0.4-1.5	<0.01	<0.015	<0.01	<0.01
Burning rate	D635	Slow	Slow	Slow	Self-extinguishing	Self-extinguishing	Self-extinguishing	Very slow	Very slow	Very slow	Very slow
Effect of Sunlight	–	Very slight	Requires black	No visible change	Slight discolouration	Slight discolouration	Discolours slightly	Requires black	Surface crazing (except black and brown)	Requires black	Requires black
Effect of weak acids	D543	Practically nil	Very resistant	No visible change	Resistant	Resistant	Resistant	Very resistant	Resistant	Very resistant	Very resistant
Effect of Strong acids	D543	Attacked only by high concentrations of oxidizing acids	Attacked slowly by oxidizing acids	Decomposes	Attacked	Attacked	Attacked	Attacked slowly by oxidizing acids	Attacked by oxidizing acids	Attacked slowly by oxidising acids	Attacked slowly by oxidising acids
Effect of weak alkalies	D543	Practically nil	None	No visible change	None	None	None	Very resistant	Resistant	Very resistant	Very resistant
Effect of strong alkalies	D543	Attacked	Very resistant	Swells	None	None	None	Very resistant	Resistant	Very resistant	Very resistant
Effect of organic solvents	D543	Soluble in ketones esters, aromatic, chlorinated hydrocarbons	Resistant below 80°C	Soluble in alcohol	Resistant to common solvents	Resistant to common solvents	Resistant to common solvents	Resistant below 80°C	Soluble in aromatic solvents above 60°C	Resistant below 80°C	Resistant below 80°C
Clarity	–	Transparent (92% light transmission), translucent, and opaque	Transparent translucent, opaque	Transparent translucent	Translucent to opaque	Translucent to opaque	Translucent to opaque	Translucent to opaque	Translucent to opaque	Translucent to opaque	Translucent to opaque