

Material Name	Type	Mechanical Properties										Thermal Properties							Electrical / Physical Properties						
		Tensile Strength, ASTM D638, psi	Tensile Elongation, ASTM D638, %	Tensile Modulus ASTM D638, psi	Izod Impact strength (73 J) ASTM D256 (notched), ft lbs/in	Flexural strength, Yield ASTM D790, psi	Flexural modulus ASTM D790, psi	Compressive Strength, Yield ASTM D695, psi	Compressive Modulus, ASTM D695, psi	Dynamic Coefficient of Friction, 40psi 50ipm, ASTM D3702	Heat Deflection Temperature at 66psi ASTM D646, F	Heat Deflection Temperature at 264psi ASTM D646, F	Maximum serving temperature for short term, F	Maximum serving temperature for long term, 0.746s, F	Thermal conductivity ASTM C177, (BTU-in)/(hr-ft ² -F)	Coefficient of linear thermal expansion ASTM D695, 1/100/F	Flammability UL 94	Volume resistivity ASTM D257, ohm/sq	Surface resistivity ASTM D257, ohm/cm	Dielectric strength ASTM D149, V/mil	Specific gravity ASTM D792	Rockwell hardness ASTM D785	Hardness, Shore D, ASTM D240	Water Absorption - 24hrs ASTM D570, %	
ABS	Unfilled	6,100	20	310,000	7.7	10,500	340,000	2,900		0.35	214	203	210	160	1.18	5.20 x 10 ⁻⁵	HB	1015	1015	450	1.04	R105		0.3	
ABS Conductive	Reinforced	17,250	2.5	350,000	1	23,500	1,450,000				225	215	200	200		3.30 x 10 ⁻⁵	HB	102 - 105	102 - 105		1.14	R110		0.26	
ABS FR	Reinforced	5,500	20	320,000	4	9,500	330,000	7,650			190	162	160	1.2	6.50 x 10 ⁻⁵	SV-A @ .108	1014 - 1015	1014 - 1015	400	1.21	R97		0.3		
ABS SD	Reinforced	5,000	13		6	8,000	260,000				190	160					HB	109 - 1011	109 - 1011		1.03		68	1.7	
Acetal Copolymer	Unfilled	8,800	25	380,000	1	11,000	360,000	4,500	290,000	0.21	316	230	285	195	1.6	4.70 x 10 ⁻⁵	HB	1014	1014	500	1.41	M86	85	0.22	
Acetal Copolymer SD	Reinforced	6,600	45		1.9	7,000	210,000			0.18	267	190	45		2.1	6.50 x 10 ⁻⁵	HB	109 - 1011	109 - 1011		1.33		76	0.2	
Acrylic Cast	Unfilled	8,038	2.7	425,000	0.45	12,000	457,000	16,000			190		150	1.45	4.00 x 10 ⁻⁵		1015	1015	375	1.19	M90		0.4		
Acrylic Extruded	Unfilled	10,100	5.1	431,000	0.28	14,600	486,000	17,000			205	190	180	0.9	3.50 x 10 ⁻⁵	HB	1015	1014	950	1.19	M93		0.4		
Ardel® Polyarylate	Unfilled	10,000	50	300,000	3.8	11,000	310,000	12,180			356	345			1.48	6.10 x 10 ⁻⁵	V-0	2 x 1014		400	1.21	R125		0.26	
Celazole® PBI	Unfilled	20,000	3	850,000	0.5	32,000	950,000	50,000	900,000	0.24		800	600	2.8	1.30 x 10 ⁻⁵	V-0	>1013	>1013	550	1.3	M125, E105	94	0.4		
Ceramic Macor®	Unfilled			9,700,000		13,600		50,000					1,472	10.16	0.57 x 10 ⁻⁵		>1016		785	2.52	A48				
CPVC	Unfilled	7,300	35	450,000	9	14,300	361,000	10,100	196,000			198	200	0.95	3.86 x 10 ⁻⁵	V-0	3.4 x 1015		1,250	1.47	R114		0.03		
Delrin® 100AF	Reinforced	8,000	15	435,000	0.7	12,000	445,000	16,000	350,000	0.19		244	180		5.00 x 10 ⁻⁵	HB		1013	400	1.5	M85, R115	83	0.2		
Delrin® 150	Unfilled	11,100	25	450,000	1.5	11,500	420,000	5,200	450,000	0.2	336	257	300	185	2.6	6.80 x 10 ⁻⁵	HB	1015	1013	500	1.42	M94, R120	86	0.25	
Delrin® 570	Reinforced	8,500	12	870,000	2.85	10,700	725,000				329	266	185		3.25 x 10 ⁻⁵	HB	1015	>1015	490	1.56	M90, R118		0.1		
ECTFE Halar®	Unfilled	7,800	250	240,000	No Break	6,800	245,000			0.19	194	145	300	1.04	5.60 x 10 ⁻⁵	V-0	1016	1017	2,000	1.68	R90	75	<0.10		
ETFE	Unfilled	6,250	225		No Break	4,640	145,000	2,470		0.23	178	124	390	311	1.65	7.20 x 10 ⁻⁵	V-0	>1017	>1015	2,005	1.74		68	<0.03	
FEP	Unfilled	3,400	325	55,000	No Break		85,000	2,100		0.2	165	130	450	400	1.4	7.90 x 10 ⁻⁵	V-0	>1018	>1016	1,350	2.15	R25	56	<0.01	
HDPE	Unfilled	4,423	>1,350	225,000	1.3		167,000			0.28	180		190	180	3.1 - 3.5	6.70 x 10 ⁻⁵	HB	1015	1015	475	0.96		67	<0.01	
HPV 13	Reinforced	12,500	17.5	858,000	0.7	10,000	350,000	10,500	350,000	0.12		215	185	1.65	5.10 x 10 ⁻⁵	HB	1014 - 1016	1013 - 1016	440	1.54	R118	83	0.22		
Hydel® PEI-7	Reinforced	9,400	4	400,000	1.4	16,250	424,000	16,200				390	340		2.90 x 10 ⁻⁵	V-0	106 - 108	106 - 108		1.26	R123		0.25		
Hydex® 202	Unfilled	9,000	80	340,000	10	12,000	280,000			0.22	290	280			3.70 x 10 ⁻⁵										
Hydex® 301	Unfilled	10,000	140	310,000	2.4	14,000	340,000			0.21	220	170			3.40 x 10 ⁻⁵										
Hydlar® Z	Reinforced	16,000	4	1,300,000	2.7	23,000	900,000	19,300				470	300		1.60 x 10 ⁻⁵									0.8	
Imidex®	Unfilled	17,100	110	442,780			548,000						446	1.25	3.10 x 10 ⁻⁵	VTM-0 @ 1 mil			6,290	1.33			1		
Kydex 100	Reinforced	6,100	160	335,000	18	9,100						173			4.20 x 10 ⁻⁵	V-0, V-5					1.35	94			
Kydex T	Reinforced	6,100	110	360,000	15							168			V-0, V-5						1.35	94			
Laminate G-10/FR-4 Glass Epoxy	Reinforced	45,000			14	70,000		55,000					284		0.60 x 10 ⁻⁵	V-0			800	1.8	M110		0.15		
Laminate G-11 Glass Epoxy	Reinforced	43,000				80,000	3,000,000	63,000					374		0.72 x 10 ⁻⁵	HB			900	1.8	M112		0.2		
Laminate G-7 Glass Silicone	Reinforced	18,000				25,000		45,000					428		0.55 x 10 ⁻⁵	V-0			400	1.78	M105		0.02		
Laminate G-9 Glass Melamine	Reinforced	44,000			12.5	61,000	2,000,000	70,000					284		0.83 x 10 ⁻⁵	V-0			450	1.85	M115		0.6		
LDPE	Unfilled	1,943	515	41,615	No Break	1,175	28,565			0.6	110	98	160	160	6.40 x 10 ⁻⁵	Not Rated	>1015	>1015	580	0.92	R41-R50	55	<0.01		
Meldin® 7001	Unfilled	12,500	8			15,800	450,000	377,000				900	600	2.4	2.70 x 10 ⁻⁵				1015 - 1016	580	1.43	E50		0.23	
Meldin® 7003	Reinforced	9,200	5.5			13,000	450,000	363,000				900	600								1.61				
Meldin® 7021	Reinforced	9,500	4.7			15,800	522,000	450,000				900	600	5	2.20 x 10 ⁻⁵				108 - 109	280	1.51	E33		0.19	
Meldin® 7022	Reinforced	8,000	3			13,000	754,000	479,000				900	600		1.40 x 10 ⁻⁵						1.65	E13		0.25	
Meldin® 7211	Reinforced	7,500	4			11,800	493,000	348,000				900	600	5.2	2.40 x 10 ⁻⁵						1.53	E9		0.23	
Noryl® 30% GF	Reinforced	15,500	5	1,000,000	2	22,000	830,000			0.27	280	270			1.69	1.40 x 10 ⁻⁵	V-0 @ .236			600	1.23	L106		0.06	
Noryl® PPO	Unfilled	9,200	25	350,000	3.5	14,400	370,000			0.39	279	254	230	220	1.32	3.30 x 10 ⁻⁵	V-0 @ .236	1017		500	1.08	R119		0.07	
Nylon 12 Low Moisture	Unfilled	7,900	>50	230,000	3.02	9,000	238,000	10,000	224,000	0.2	343	122	300	250		5.5 x 10 ⁻⁵				500	1.03	R108		0.1	
Nylon 6 Copolymer	Reinforced	8,700	25	240,000	0.9	15,000	285,000	11,000	200,000	0.22	400	200	300	210		5.00 x 10 ⁻⁵				500	1.1	R100		0.6	
Nylon 6 FG Oil Filled	Reinforced	9,500	35	375,000	1.4	14,000	375,000	12,000	275,000	0.12	400	200	330	230		5.00 x 10 ⁻⁵				500	1.14	R100		0.6	
Nylon 6 Heat Stabilized Blue	Reinforced	12,200	20	485,000	0.7	15,000	420,000	15,500	300,000	0.22	400	200	330	250		5.00 x 10 ⁻⁵				500	1.15	R115		0.6	
Nylon 6 Impact Modified	Reinforced	9,700	25	375,000	0.82	12,000	330,000	12,500	280,000	0.22	400	200	330	230		4.5 x 10 ⁻⁵				500	1.14	R110		0.6	
Nylon 6 MD Filled	Reinforced	10,000	20	400,000	0.7	15,500	420,000	13,500	325,000	0.22	400	200	330	230		5.00 x 10 ⁻⁵				500	1.15	R115		0.6	
Nylon 6 Natural	Unfilled	12,500	25	400,000	0.7	15,500	420,000	13,500	325,000	0.22	400	200	330	230		6.10 x 10 ⁻⁵				500	1.16	R115		0.6	
Nylon 6 Oil Filled	Reinforced	9,500	35	375,000	1.4	14,000	375,000	12,000	275,000	0.12	400	200	330	230		5.0 x 10 ⁻⁵				500	1.14	R100		0.6	
Nylon 6 Oil/MD Filled	Reinforced	9,500	35	375,000	1.4	14,000	375,000	12,000	275,000	0.12	400	200	330	230		5.0 x 10 ⁻⁵				500	1.14	R100		0.6	
Nylon 6 Solid Lubricant Filled	Reinforced	10,500	35	375,000	1.4	14,000	375,000	12,000	275,000	0.12	410	175	330	230		5.0 x 10 ⁻⁵				500	1.14	R115		0.5	
Nylon 6/12 Low Moisture	Unfilled	8,000	20	300,000	0.9		275,000	2,400				142			1.53	5.00 x 10 ⁻⁵	HB	1015			1.06	R114		0.25	
Nylon 6/6 30% GF	Reinforced	13,000	14	797,000																					

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Polycarbonate	Unfilled	9,500	110	345,000	14	13,500	345,000	12,500	345,000	0.38	280	270	275	240	1.35	3.75 x 10 ⁻⁵	HB @ .060	8.2 x 10 ¹⁶	1015	380	1.2	M70, R118	0.15		
Polycarbonate 20% GF	Reinforced	16,000	5	860,000	2.06	19,000	798,000	16,000		0.22	298	295	270	266	1.47	1.50 x 10 ⁻⁵	V-1	1017		490	1.2	M91, R122	0.16		
Polycarbonate 40% GF	Reinforced	23,000	3	1,680,000	2.5	27,000	1,400,000	21,000			310	295		266	1.53	9.00 x 10 ⁻⁵	V-1 @ .044	1017		450	1.52	M93, R119	0.12		
Polypropylene Copolymer	Unfilled	4,800	650	152,000	7.8	3,750	184,000				173		210	180		4.30 x 10 ⁻⁵	Not Rated	>1015	>1015	575	0.88		73	0.01	
Polypropylene Homopolymer	Unfilled	5,150	400	240,000	1.2	7,250	212,500	5,750	225,000	0.26	210	130	200	180	0.81	4.30 x 10 ⁻⁵	HB	>1015	>1015	550	0.9	R95	78	<0.01	
Polypropylene M	Unfilled	5,076	12		0.9		210,000						187							0.9	R100				
Polystyrene High Impact	Unfilled	>3,000	50		2.8	4,210	240,000						185		165	0.98	5.00 x 10 ⁻⁵	HB	1016	1015	1,350	1.04		0.2	
Polysulfone	Unfilled	10,200	75	360,000	1.3	15,400	390,000	13,900	375,000	0.37	358	345	340	285	1.8	3.10 x 10 ⁻⁵	V-0	5 x 10 ¹⁶	5 x 10 ¹⁵	425	1.24	R120	80	0.3	
PPE (Tecnyl MT)	Unfilled	9	16.3	471	2.6	14	368						296		168						1.08				
PPS	Unfilled	15,000	10	731	0.52	24,000	622,000	17,800	367,000		400	220	500	338	2.08	3.30 x 10 ⁻⁵	V-0	1015		450	1.35	M102	85	0.02	
PTFE	Unfilled	4,000	400	66,700	3.5		72,000	1,000		0.1	284	131	600	500	1.7	6.50 x 10 ⁻⁵	V-0	>1018	>1018	300	2.15	R58	58	0.01	
PTFE 25% CF	Reinforced	1,950	115				1,600						500	5	8.00 x 10 ⁻⁵						2.07		64		
PTFE 25% GF	Reinforced	1,500	100				1,400	97,200					500	3	5.50 x 10 ⁻⁵						2.2		57		
PVC	Unfilled	7,500	35	411,000	0.8	12,800	481,000	9,500	375,000	0.3	179	150	160	140	1.02	3.20 x 10 ⁻⁵	V-0	5.4 x 10 ¹⁵		544	1.42	R115	89	0.06	
PVDF	Unfilled	7,800	35	350,000	3	10,750	310,000	11,600		0.24	300	235	340	280	1.32	7.10 x 10 ⁻⁵	V-0	5 x 10 ¹⁴	5 x 10 ¹⁴	280	1.78	R100	77	<0.04	
PVDF Kynar 740	Unfilled	<7,000	<200	>200	<4.00	<11,000	>240,000	<15,000		0.14	>257	>221			>1.18	>6.60	V-0	2 x 10 ¹⁴		<1.79	76D - 80D		>0.01		
Radel® A PES	Unfilled	12,000	75	385,000	1.6	16,100	420,000	14,500	388,000		417	400		400	1.13	2.70 x 10 ⁻⁵	V-0	1.7 x 10 ¹⁵		380	1.37	R127		1.85	
Radel® R PPSU	Unfilled	10,100	90	340,000	13	13,200	350,000	14,350	251,000		417	405			2.42	3.10 x 10 ⁻⁵	V-0	>1015	>1015	360	1.29	R122	80	0.37	
Radel® R5500	Unfilled	10,100	90	340,000	10	13,200	350,000	14,350	251,000		417	405			2.42	3.10 x 10 ⁻⁵	V-0				1.29			0.37	
Rulon® AR	Reinforced	2,000	175		6					0.2				500	2.3	5.10 x 10 ⁻⁵					2.22		68	0	
Rulon® J	Reinforced	2,000	180			180,000	1,000			0.16				550	1.7	5.80 x 10 ⁻⁵		8.2 x 10 ¹⁸	6.3 x 10 ¹⁸	200	1.95		60	0	
Rulon® LR	Reinforced	2,000	135		6					0.2				550	2.3	4.90 x 10 ⁻⁵		1015	2 x 10 ¹³	450	2.25		68	0	
Ryton® PPS 40% GF	Reinforced	7,842	1		0.9	26,650								340							1.69		88		
Ryton® PPS Bearing Grade	Unfilled	5,100	1.5		1.6	7,600								340							1.90	1.43		88	
Semitron® Esd 225	Reinforced	5,400	15	200,000	1.5	7,300	220,000	8,000	175,000	0.29		225		180		9.30 x 10 ⁻⁵	HB		109 - 1010		1.33	M50, R108	76	2	
Semitron® Esd 410C	Reinforced	9,000	2	850,000	0.8	12,000	850,000	19,500	600,000	0.18	410			338	2.45	1.80 x 10 ⁻⁵	V-0		104 - 106		1.41	M115, R125	85	0.3	
Semitron® Esd 420	Reinforced	9,500	2	550,000	1	14,500	525,000	16,500	350,000	0.2	420			340	1.6	3.20 x 10 ⁻⁵	V-0		106 - 109		1.45	M87		0.8	
Semitron® Esd 500HR	Reinforced	1,500	50	250,000	1	2,200	350,000	3,800	225,000	0.1	210			500		5.70 x 10 ⁻⁵	V-0		1010 - 1012		2.3	R50	65	0.03	
Semitron® Esd 520HR	Reinforced	12,000	3	800,000	0.8	20,000	850,000	30,000	600,000	0.24	520			500	2.48	2.35 x 10 ⁻⁵	V-0		1010 - 1012	475	1.58	M108		0.6	
Tecaform® UD Blue	Reinforced	8,450	7.9	400	0.68	13,780	459		264					212							1.61	M89			
Tecator® TI5013	Unfilled	21,000	15		2.3	33,000	711,000	30,000					532		500	1.66 x 10 ⁻⁵	V-0		5 x 10 ¹⁵	600	1.41	M119		0.3	
Tecator® TI5031	Unfilled	19,000	10		2	23,000	870,000						534		500		V-0				1.46	M109			
Tecator® XP142T	Reinforced	17,000	2		0.75	21,000	821,000							500		2.11 x 10 ⁻⁵	V-0			450	1.58	M116			
TPX® Polymethylpentene	Unfilled	1,400	33	270,000	0.95	4,000	160,000	3,340					338		392	2.85	7.20 x 10 ⁻⁵	HB	>1016	1015	737	0.83	R85		0.17
UHMW-PE	Unfilled	5,800	200	120,000	No Break		110,000	2,400	75,000	0.12	180			200	180	2.9	11.0 x 10 ⁻⁵	Not Rated	1017	1017		0.93		68	<0.01
UHMW-PE Anti-Static	Reinforced	4,000	140	156,900	No Break		100,000			0.12				200	180	11.0 x 10 ⁻⁵	Not Rated	105 - 109	105 - 109		0.93		68	<0.01	
UHMW-PE Oil Filled	Reinforced	6,527	280	76,000	No Break		63,818			0.13				200	180	11.0 x 10 ⁻⁵	Not Rated	1017	1017		0.93		68	<0.01	
UHMW-Tivar HOT	Reinforced	5,800	300	110,000	No Break		110,000	3,000	80,000	0.12	0	116	0	275	2.84		HB			2,300	0.03	68D	>0	0.01	
Ultem®	Unfilled	15,200	60	430,000	1	22,000	480,000	21,900	480,000	0.17	410	392	380	338	0.85	3.10 x 10 ⁻⁵	V-0	1017		710	1.27	M109	86	0.25	
Ultem® 2300	Reinforced	24,500	13	1,300,000	1.6	33,000	1,300,000	30,700	938,000		414	410		356	1.56	1.10 x 10 ⁻⁵	V-0	3 x 10 ¹⁶		630	1.51	M114	86	0.16	