Material Comparison Chart 2

Properties	A.S.T.M Test Method	A.B.S	ACETAL	ACRYLIC	FLUROPOLYMERS		NYLON				PHENYLENE OXIDE (NORYL")	POLY -MIDE	POLY-CARBONATE	POLY-ESTEF(PBT Valox	POLY-ETHERIMID ultem	POLYSULF-ONE udel	POLYETHYLENE			POLY-PROPYLENE	POLY-STYRENE	POLY-VINYL CHLORIDE
					PTFE	FEP	TYPE 6	TYPE 66	TYPE 612	CAST TYPES							LOW DENSITY	HIGH DENSITY	UHMW			
Specific Gravity	D792	1.02	1.42	1.18	2.14-2.20	2.12	1.12-1.14	1.14-1.1	1.06	1.15	1.06	1.40	1.25	1.31	1.34	1.24	.910	.941	.965	902	1.06	1.32
Water absorption Method A	D570	0.3	0.25	0.3	>0.01	<0.01	2.9	1.24	0.25	---	.07	0.4	0.12	0.08	0.28	0.3	---	---	NIL	03	.07	.02
Tensile strength at yield, 1000 psi	D638	6.0	10	9.6	1.0	3.4	9.4	12	8.8	1-14	9.6	7.5	10.1	7.5	16.6	10.0	1.0-2.3	4.0	6.8	4.5	2.9	6.3
Elongation at yield, %	D638	2.5	75	4.0	2	300	25	>150	7	10	60	---	8	300 at break	---	4.0	---	---	450	12	---	---
Elastic modulus in Tension, 10 psi	D638	4.0	4.5	4.1	0.58	---	---	4.4	---	3.5-4.5	3.55	---	3.2	---	--	3.6	0.14-0.35	0.8-1.5	1.3	1.75	2.75	4.1
Flexural strength at yield, 1000 psi	D790	12.9	14.3	15.0	---	no break	no yield	16	no yield	16-17.5	13.5	---	13.2	12.0	28.0	15.4	---	---	---	---	5.3	12.4
Elastic modulus in flexure, 10 psi	D790	4.4	3.8	4.4	0.5-0.9	9.5	1.50	4.1	2.95	---	3.60	6.64	3.2	3.4	6.5	3.9	0.20	0.45	11	19	---	4.85
Compressive strength at yield, 100 psi	D695	11.2	5.2	14.5	1.2	2.2	---	---	---	---	16.4	3.2	11.0	13.0	22.5	---	---	2.4	2.6	---	---	---
Elastic modulus in compression, 10 psi	D695	2.3	---	4.0	0.6-0.9	---	---	---	---	---	---	4.0	---	---	---	---	---	---	---	---	---	---
Rockwell Hardness (Method A)	D785	R96	R120	M89	D50	D55	R104	88	R114	R112	R119	M119	73	R117	M114	R120	0.41	060	R64	R85	L65	R111
Izop impack strength, ft-lb/in. notch 1/8 in. speciman	D256	10.0	2.3	0.4	3.0	no break	2.2	1.2	1.5	---	5.0	2.5	15.0	1.0	1.1	1.3	---	---	no break	0.9	2.0	>5
Deform under load (2000 psi; 122°F). %	D621	0.15	0.5	0.3	---	---	---	0.8	1.6	0.5-1.0	0.30	---	---	---	---	---	---	---	---	---	---	---
Deflection temperature. Fat 66 psi fiber stress	D648	180	342	185	250	158	340	450	356	400	279	500	280	310	410	325	---	---	---	210	185	140
Max recommended service temp.°F intermittent use	---	220	230	185	---	450	---	---	---	---	220	---	250	---	---	---	---	---	---	---	---	--
Max recommended service temp.°F continuous use	---	180	200	145	500	400	175	270	290	200-225	220	400	240	---	338	---	110	140	163	160	---	---
Coeff. of linear thermal expansion, °F	D696	$5.7\text{-}10^5$	$5.8\text{-}10^5$	$4.5\text{-}10^5$	$5.5\text{-}10^5$	$8.3\text{-}10\text{-}10^5$	$4\text{-}10^5$	$4.5\text{-}10^5$	$5\text{-}10^5$	$5.0\text{-}10^5$	3.3	$1.8\text{-}10^5$	$37.5\text{-}10^5$	7.1	$1.8\text{-}10^5$	$3.1\text{-}10^5$	---	---	---	---	---	3.5-10
Underwriter's Lab Rating (Subj.94)	---	HB	HB	HB	V-O	V-O	HB	V-2	V-2	---	V-1	VEO	VO	HB	V-O	V-2	---	---	---	HB	HB	HB
Dielectric Strength v/mil. shor time	D149	357 (1/8)	500	500	400-600	500-600	---	555	650	500	550	600	400	590	320	425	450	500	900	600	---	600
Dielectric constant at 60 hertz	D150	30-50	3.7	3.7	2.1	2.1	7.2	4.0	4.0	3.7	2.65	---	2.96	3.3	---	3.07	---	---	2.3	---	---	3.9
Dielectric constant at 1 MegaHertz	D150	2.8-3.8	3.7	2.3	2.1	2.1	3.7	3.5	3.5	3.7	2.64	---	2.96	3.1	---	.002	---	---	---	2.3	---	---
Dissipation factor, at 60 Hertz	D150	.004-.034	---	.04	.0002	.0001	---	0.02	.02	---	.0004	---	0.0006	0.002	.0013	.0008	---	---	---	---	---	---
Dissipation factor at 1 MegaHertz	D150	.006-.011	.005	.03	.0002	.0007	.012	0.03	.02	---	.0009	---	0.0090	0.02	.0025	.0034	---	---	---	.0003	---	---
Volume resistivity, ohm-cm	D257	10^{13} - 10^{18}	10^{18}	10^{18}	$>10^{18}$	$>10^{18}$	10^{12}	10^{18}	10^{18}	---	10^{17}	1.2 - 10^{17}	10^{18}	4.0 - 10^{18}	6.7 * 10^{17}	$5*10^{18}$	---	---	10^{18}	10^{18}	---	---
Arc resistance (SS Electrode), sec	D495	97 (1/8)	220	no tracking	>300	>180	---	123	---	---	75	---	30*70	184	128	122	---	---	---	---	---	---