

Summary Of Properties

The information presented in this publication is believed to be accurate and is not intended to constitute a specification. Property characteristics are dramatically impacted by geometry and processing method; therefore the properties of extruded parts may vary. This table is only meant to serve as a general guideline; users should evaluate the material to determine the suitability for their own particular application.

	ASTM	PTFE	FEP	PFA	THV	PVDF	EFEP	ETFE	PEEK	ECTFE
PHYSICAL										
Density (g/cc)	D792	2.16 - 2.22	2.12 - 2.17	2.12 - 2.17	1.95-2.06	1.76-1.88	1.74	1.7-1.86	1.1-1.48	1.68
Water Absorption (%)	D570	0	0.004	<0.03	<0.03	.01-.06	0.1 max.	0.007	.1-.45	<0.02
Standard Percent Crystallinity (%)		>90	70	48-70	26-29	35-70	10	50	25-35	50-55
Water Contact Angle		110	114	115	--	88-92	96	96	--	99
Refractive Index		1.35	1.33-1.35	1.35	1.3502	1.42	1.338-1.34	1.34	--	1.45
Radiation Resistance (MRad)		1	10	1-10	20	1000	--	50	1000	200
Oxygen Index (%)	D2863	>95	95 min.	95 min.	65-75	44-80	31	30-46	35	52
MECHANICAL										
Hardness, Shore D	D2240	50 - 65	55-65	55-60	44-58	65-82	75	63 - 72	>85	70-75
Ultimate Tensile Strength (MPa)	D638	20 - 35	18-34	25-35	20-29	17-48	40 - 50	37-50	75-97	30-48
Elongation at Break (%)	D638	200 - 550	245-400	250-420	420-600	50-400	420 - 460	200-550	96-110	200-300
Modulus of Elasticity (GPa)	D638	0.39-0.6	0.44-0.64	0.45	0.24	0.5-5	0.490 -0.78	0.49-0.78	2.3-4.3	1.4-2.1
Flexural Modulus (GPa)	D790	0.275-0.7	0.58-0.62	0.6-0.7	0.032-0.52	1.3-7	0.88 - 1.37	0.7-1.2	3.6-4.1	1.6-2
Coefficient of Friction		.02-.2	.04-.2	.04-.2	0.8	.14-.23	0.055 - 0.078	.05-.4	0.34	.1-.2
ELECTRICAL										
Volume Resistivity (Ω -cm)	D257	1e14-1e19	1e17-1e18	1e18	>1e15	1.5-2e14	1e16	1e17	4.9e16	5.5e15
Dielectric Constant 1MHz	D150	2.1	2 - 2.1	1.9-2.1	2.4-6.6	7	2.6	2.5-2.6	2.8-2.2	2.57-2.59
Dissipation Factor 1MHz	D150	0.0002	0.0006	0.003	.09-.14	.03-.05	0.005	0.007	0.004	.0013-.0017
Dielectric Strength (V/mil)	D149	189-610	500-2000	500-2000	1220-1570	800-1700	400	400-1800	500	400-2000
THERMAL										
Conductivity (W/m-K)	C117	0.167-0.3	0.19-0.25	0.15-0.25	--	0.17-0.19	0.24	0.24	0.25	0.151-0.157
Maximum Service Temperature Air (°C)		260	200-205	260	150	100-130	150	150	250 - 260	150
Minimum Service Temperature, Air (°C)		-200 - -240	-200 - -240	-200	-50		--	-100 - -190		<-76
Deflection Temperature 0.46 MPa (°C)	D648	140	77	115-120	30-37	125-140	--	80-115	--	90-115
Deflection Temperature 1.8 MPa (°C)	D648	55	48	50 - 74	--	110-115	--	60-67	160	63
Melt Temperature (°C)		327-342	265-275	300-315	120-185	172	160-195	230-280	343	263
Glass Temperature (°C)		127	80	100	5-36	-30 - -40	40-50	40-80	143	85
Decomposition Temperature (°C)	E1131	400-500	380-430	475	420-440	375-400	350	350-380	540	350
Specific heat 25°C (J/gK)	E1269	1.3	1	.89	1.03	1.12	1.14	1.13	1.14	0.95
Specific heat 100°C (J/gK)	E1269	1.13	1.17	.96	1.29	1.53	1.56	1.44	1.45	1.26
Specific heat 200°C (J/gK)	E1269	1.3	1.38	1.24	1.29	1.62	1.72	1.9	1.91	1.55
CTE, linear 20°C (μ m/m-°C)	D696	126-180	100-135	120-140	--	90-144	50 - 90	50-90	47	80