

PEEK Data Sheet

		Ketron PEEK	Victrax PEEK 450G	Ketron PEEK	30% Glass-filled Ketron PEEK	30% Glass-filled Ketron PEEK	Victrax PEEK 450GL30	30% Carbon-filled Ketron PEEK	30% Carbon-filled Ketron PEEK	Victrax PEEK 450CA30	Ketron PEEK HPV	Victrax PEEK Optima LT	
Mechanical	ASTM Test Method	Compression Molded Polyether-etherketone	Injection Molded Polyether-etherketone	Extruded Polyether-etherketone	Compression Molded 30% GF PEEK	Extruded 30% GF PEEK-	Injection Molded 30% GF PEEK	Compression Molded 30% CF PEEK	Extruded 30% Carbon-filled PEEK	Injection Molded 30% CF PEEK	Bearing Grade Polyether-etherketone	Injection Molded Polyether-etherketone	Units
Strength to Weight Ratio	-	-	-	-	-	-	-	-	-	-	-	-	ksi
Specific Gravity @73 F	D792	1.32	1.3	1.31	1.45	1.54	1.5	1.42	1.41	1.41	1.44	1.3	-
Tensile Strength @73 F, (ult)/(yld)	D638	15,000 (ult)	14,100 (ult)	16,000 (ult)	17,000 (ult)	18,000	22,620	20,000 (ult)	23,200 (ult)	33,785 (ult)	17,400	14,100 (ult)	psi
Tensile Modulus of Elasticity @73 F	D638	450,000	522,000	500,000	750,000	1,000,000	1,407,000	800,000	1,400,000	1,885,000	1,100,000	522,000	psi
Tensile Elongation at Break @73 F	D638	1	5	20	3	3	2	2	3	2	3	5	%
Flexural Strength @73 F	D790	25,000	24,650	2,500	28,000	28,000	33,785	30,000	-	51,475	-	24,650	psi
Flexural Modulus of Elasticity @73 F	D790	600,000	594,500	600,000	1,000,000	1,000,000	1,450,000	1,300,000	-	2,929,000	-	594,500	psi
Shear Strength @73 F	D732	-	7,685 (ult)	8,000	-	14,000	14,065 (ult)	-	-	14,065 (ult)	-	7,685 (10)	psi
Comprehensive Strength, (% Deformation) @73 F	D695	17,000 (10)	17,255 (10)	20,000 (10)	19,000 (10)	26,000 (10)	31,175 (10)	25,000 (10)	29,000 (10)	34,800 (10)	21,800 (10)	17,255 (10)	psi
Comprehensive Modulus of Elasticity @73 F	D695	450,000	-	500,000	500,000	1,000,000	-	550,000	-	-	-	-	psi
Hardness, Rockwell, Scale as noted @73 F	D785	M99 (R126)	M99 (R126)	M100 (R126)	M103 (R124)	M103 (R126)	M103 (R124)	M97 (R125)	M104	M107 (R124)	M99	M99 (R126)	-
Hardness, Durometer, Shore D @73 F	D2240	D85	-	D85	D86	D86	-	D86	-	-	-	-	-
Izod Impact, (Notched) @73 F	D256 Type A	1	1.6	1	1.4	1.4	1.8	1.4	1.4	1.6	1.6	0.7	1.6 ft-lb/in of notch
Coefficient of Friction, (Dry vs Steel) Dynamic	-	0.4	-	0.4	-	-	-	0.19	-	-	-	0.24	-
Limiting PV, (with 4 to 1 factor of safety applied)	-	12,500	-	5,500	-	-	-	25,000	25,000	-	13,000	-	psi-ft/min
Thermal	ASTM Test Method	Compression Molded Polyether-etherketone	Injection Molded Polyether-etherketone	Extruded Polyether-etherketone	Compression Molded 30% GF PEEK	Extruded 30% GF PEEK-	Injection Molded 30% GF PEEK	Compression Molded 30% CF PEEK	Extruded 30% Carbon-filled PEEK	Injection Molded 30% CF PEEK	Bearing Grade Polyether-etherketone	Injection Molded Polyether-etherketone	Units
Coefficient of Linear Thermal Expansion @73 F	E-831 (TMA)	2.6 E-05	2.6 E-05	2.6 E-05	1.4 E-05	1.2 E-05	1.2 E-05	1.7 E-05	1.0 E-05	8.0 E-06	1.4 E-05	2.6 E-05	in/in/F
Heat Deflection Temperature @264 psi	D648	320	306	320	600	600	600	600	518	600	446	306	F
Tg-Glass transition temperature, (Amorphous)	D3418	-	289	-	-	-	289	-	289	289	289	289	F
Melting Point, (VS=Vicat Softening Temp.)	D3418	644	644	644	644	644	644	644	644	644	644	644	F
Continuous Service Temperature in Air, (Max.)	-	480	480	480	480	480	480	480	480	593	480	482	480 F
Thermal Conductivity	-	1.75	1.75	1.75	2.98	2.98	2.98	6.37	6.4	6.37	1.7	1.75	BTU-in / hr-ft2-F
Electric	ASTM Test Method	Compression Molded Polyether-etherketone	Injection Molded Polyether-etherketone	Extruded Polyether-etherketone	Compression Molded 30% GF PEEK	Extruded 30% GF PEEK-	Injection Molded 30% GF PEEK	Compression Molded 30% CF PEEK	Extruded 30% Carbon-filled PEEK	Injection Molded 30% CF PEEK	Bearing Grade Polyether-etherketone	Injection Molded Polyether-etherketone	Units
Dielectric Strength, Short Term	D149	480	480	480	500	500	500	-	32	-	-	480	Volts/mil
Volume Resistivity	D257	4.9 E+16	4.9 E+16	4.9 E+16	5.0 E+16	5.0 E+16	1.0 E+16	-	1.0 E+06	1.4 E+05	<1 E8	4.9 E+16	ohm-cm
Dielectric Constant @10E6 Hz	D150	3.3	3.3	3.3	3.3	-	3.7	-	-	-	-	3.3	-
Dissipation Factor @10E6 Hz	D150	0.003	0.003	0.003	-	-	0.004	-	-	-	-	0.003	-
Flammability @3.1 mm unless noted	UL94	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
H2O	ASTM Test Method	Compression Molded Polyether-etherketone	Injection Molded Polyether-etherketone	Extruded Polyether-etherketone	Compression Molded 30% GF PEEK	Extruded 30% GF PEEK-	Injection Molded 30% GF PEEK	Compression Molded 30% CF PEEK	Extruded 30% Carbon-filled PEEK	Injection Molded 30% CF PEEK	Bearing Grade Polyether-etherketone	Injection Molded Polyether-etherketone	Units
Water Absorption, Immersion, 24 hours	D570(7)	0.15	0.5	0.1	0.15	0.1	0.11	0.15	0.06	0.06	0.05	0.5	% by weight
Water Absorption, Saturation	D570(7)	0.5	0.5	0.5	0.5	0.3	-	0.5	0.3	-	0.3	0.5	% by weight