Product Comparison

Technical Data

Product Description	
Generic PI, TP - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic PI, TP - Glass Fiber This information is provided for comparative purposes only.
Generic PPSU - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic PPSU - Glass Fiber This information is provided for comparative purposes only.
Generic PTFE - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic PTFE - Glass Fiber This information is provided for comparative purposes only.
Generic PEEK - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic PEEK - Glass Fiber This information is provided for comparative purposes only.
Generic PAEK - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic PAEK - Glass Fiber This information is provided for comparative purposes only.

General	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber
Manufacturer / Supplier	• Generic	• Generic	• Generic	• Generic	• Generic
Generic Symbol	• PI, TP	• PPSU	• PTFE	• PEEK	• PAEK
Material Status	• Commercial: Active	• Commercial: Active	• Commercial: Active	• Commercial: Active	• Commercial: Active
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber	• Glass Fiber	• Glass Fiber	• Glass Fiber	• Glass Fiber

Product Comparison

Physical	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Density / Specific Gravity							
--	--	1.37 to 1.50	2.21 to 2.40	1.37 to 1.62	1.50 to 1.51	g/cm³	ASTM D792
--	--	--	--	1.50 to 1.54	--	g/cm³	ISO 1183
--	--	--	0.510 to 0.890	--	--	g/cm³	ASTM D1505
Apparent (Bulk) Density	--	--	0.42 to 0.75	--	--	g/cm³	ASTM D1895
Spiral Flow	--	--	--	8.00 to 41.3	--	cm	
Molding Shrinkage							
Flow	--	--	--	0.19 to 0.81	--	%	ASTM D955
Across Flow	--	--	--	0.56 to 2.0	--	%	ASTM D955
--	--	--	--	0.28 to 0.92	--	%	ISO 294-4
Water Absorption							
24 hr	--	--	--	0.096 to 0.15	0.10 to 0.20	%	ASTM D570
24 hr, 23°C	--	--	--	0.098 to 0.10	--	%	ISO 62
Saturation, 23°C	--	--	--	0.30 to 0.40	--	%	ISO 62
Equilibrium	--	--	--	0.10 to 0.30	--	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	--	--	0.010 to 0.11	--	%	ISO 62

Mechanical	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Tensile Modulus							
--	--	--	3560 to 4870	4830 to 13500	9900 to 17900	MPa	ASTM D638
--	--	3380 to 5930	--	5850 to 13300	--	MPa	ISO 527-1
Tensile Strength							
Yield	--	--	--	155 to 181	--	MPa	ASTM D638
Yield	--	--	--	70.3 to 174	--	MPa	ISO 527-2
Break	--	--	--	111 to 207	--	MPa	ASTM D638
Break	--	64.8 to 110	--	35.8 to 197	--	MPa	ISO 527-2
--	--	79.3 to 172	17.1 to 25.6	116 to 193	169 to 170	MPa	ASTM D638
--	--	--	--	79.0 to 188	--	MPa	ISO 527-2

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Mechanical	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Tensile Elongation							
Yield	--	3.0 to 3.8	--	2.2 to 3.3	--	%	ASTM D638
Yield	--	--	--	2.0 to 3.5	--	%	ISO 527-2
Break	--	--	150 to 320	0.80 to 4.7	--	%	ASTM D638
Break	--	2.2 to 2.6	--	0.70 to 5.0	--	%	ISO 527-2
Flexural Modulus							
--	--	3450 to 11000	--	5940 to 11500	9400 to 16500	MPa	ASTM D790
--	--	--	--	5490 to 36500	--	MPa	ISO 178
Flexural Strength							
--	--	--	--	152 to 285	230 to 242	MPa	ASTM D790
--	--	--	--	45.0 to 391	--	MPa	ISO 178
Break	--	--	--	289 to 296	--	MPa	ASTM D790
Compressive Strength							
--	--	--	--	31.0 to 280	--	MPa	ASTM D695
--	--	--	--	51.1 to 250	--	MPa	ISO 604
Shear Strength	--	--	--	50.7 to 98.9	--	MPa	ASTM D732

Elastomers	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Tensile Strength	--	--	15.0 to 19.0	--	--	MPa	ASTM D412
Tensile Elongation (Break)	--	--	140 to 210	--	--	%	ASTM D412

Product Comparison

Impact	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Charpy Notched Impact Strength	--	--	--	2.9 to 12	--	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	--	--	--	35 to 81	--	kJ/m²	ISO 179
Notched Izod Impact							
--	--	67 to 110	--	40 to 140	--	J/m	ASTM D256
--	--	--	--	3.8 to 12	--	kJ/m²	ISO 180
Unnotched Izod Impact							
--	--	--	--	690 to 990	--	J/m	ASTM D4812
--	--	--	--	25 to 65	--	kJ/m²	ISO 180
Instrumented Dart Impact	--	--	--	7.75 to 17.2	--	J	ASTM D3763

Hardness	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Rockwell Hardness	--	--	29 to 36	100 to 124	--		ASTM D785
Durometer Hardness							
--	--	--	57 to 62	--	--		ASTM D2240
--	--	--	63 to 65	86 to 88	--		ISO 868

Thermal	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Deflection Temperature Under Load							
0.45 MPa, Unannealed	--	--	--	289 to 339	--	°C	ASTM D648
0.45 MPa, Unannealed	--	--	--	240 to 338	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	245 to 316	--	--	256 to 327	--	°C	ASTM D648
1.8 MPa, Unannealed	--	--	--	237 to 338	--	°C	ISO 75-2/A
Continuous Use Temperature	--	--	--	238 to 250	--	°C	ASTM D794
Glass Transition Temperature	--	--	--	143	--	°C	ISO 11357-2
Vicat Softening Temperature							
--	--	--	--	320	--	°C	ASTM D1525
--	--	--	--	300 to 325	--	°C	ISO 306
Melting Temperature							
--	--	--	--	341 to 343	--	°C	
--	--	--	--	342 to 343	--	°C	ISO 11357-3

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Thermal	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
CLTE							
Flow	--	--	--	2.1E-5 to 2.9E-5	--	cm/cm/°C	ASTM D696
Flow	--	--	--	3.2E-6 to 3.4E-5	--	cm/cm/°C	ASTM E831
Flow	--	--	--	1.3E-5 to 3.1E-5	--	cm/cm/°C	ISO 11359-2
Transverse	--	--	--	3.6E-5 to 5.5E-5	--	cm/cm/°C	ASTM E831
Transverse	--	--	--	4.0E-5 to 1.2E-4	--	cm/cm/°C	ISO 11359-2
Thermal Conductivity	--	--	--	0.30 to 0.43	--	W/m/K	ISO 8302

Electrical	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Surface Resistivity							
--	--	--	--	5.1E+4 to 1.0E+17	--	ohms	ASTM D257
--	--	--	--	1.0E+12 to 1.3E+14	--	ohms	IEC 60093
Volume Resistivity							
--	--	--	--	5.1E+2 to 1.9E+16	--	ohms·cm	ASTM D257
--	--	--	--	9.8E+15 to 1.0E+16	--	ohms·cm	IEC 60093
Dielectric Strength							
--	--	--	--	20 to 23	--	kV/mm	ASTM D149
--	--	--	--	20 to 25	--	kV/mm	IEC 60243-1
Dielectric Constant							
--	--	--	--	3.33 to 4.03	3.30 to 3.74		ASTM D150
--	--	--	--	3.10 to 3.61	--		IEC 60250

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Electrical	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Dissipation Factor							
--	--	--	--	1.0E-3 to 4.2E-3	9.0E-4 to 4.1E-3		ASTM D150
--	--	--	--	3.9E-3 to 5.0E-3	--		IEC 60250
Comparative Tracking Index	--	--	--	150 to 200	--	V	IEC 60112
Insulation Resistance	--	--	--	1.0E+12 to 2.5E+14	--	ohms	IEC 60167

Flammability	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Oxygen Index	--	--	--	36 to 45	--	%	ASTM D2863

Fill Analysis	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit	Test Method
Melt Viscosity	--	--	--	200 to 558	--	Pa·s	ASTM D3835

Injection	Generic PI, TP - Glass Fiber	Generic PPSU - Glass Fiber	Generic PTFE - Glass Fiber	Generic PEEK - Glass Fiber	Generic PAEK - Glass Fiber	Unit
Drying Temperature	--	149 to 160	--	133 to 151	--	°C
Drying Time	--	2.9 to 3.0	--	3.0 to 7.0	--	hr
Suggested Max Moisture	--	--	--	0.020 to 0.10	--	%
Hopper Temperature	--	--	--	99 to 100	--	°C
Rear Temperature	--	--	--	354 to 376	--	°C
Middle Temperature	--	--	--	367 to 400	--	°C
Front Temperature	--	--	--	372 to 399	--	°C
Nozzle Temperature	--	--	--	367 to 383	--	°C
Processing (Melt) Temp	--	360 to 371	--	369 to 395	--	°C
Mold Temperature	--	129 to 170	--	152 to 193	--	°C
Injection Pressure	--	--	49.0 to 58.8	--	--	MPa
Back Pressure	--	--	--	0.431 to 2.59	--	MPa
Screw Speed	--	--	--	55 to 80	--	rpm