

SABIC Innovative Plastics ULTEM 1010P PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Enhanced flow Polyetherimide (Tg 217C) in 350 micron powder. ECO Conforming.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1010P-PEI.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D792
Density	1.27 g/cc	0.0459 lb/in ³	ISO 1183
Water Absorption	0.25 % @Time 86400 sec	0.25 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.700 %	0.700 %	23 ^o C / 50% RH; ISO 62
Moisture Absorption at Equilibrium	1.25 %	1.25 %	ASTM D570
Water Absorption at Saturation	1.25 %	1.25 %	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	17.8 g/10 min @Load 6.60 kg, Temperature 337 ^o C	17.8 g/10 min @Load 14.6 lb, Temperature 639 ^o F	ASTM D1238
Melt Index of Compound	13 g/10 min @Load 5.00 kg, Temperature 340 ^o C	13 g/10 min @Load 11.0 lb, Temperature 644 ^o F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	109	109	ASTM D785
Tensile Strength at Break	85.0 MPa	12300 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	105 MPa	15200 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	60 %	60 %	5 mm/min; ISO 527
	60 %	60 %	Type I, 5 mm/min; ASTM D638

Elongation at Yield Mechanical Properties	6.0 % Metric	6.0 % English	5 mm/min; ISO 527 Comments
	7.0 %	7.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	3.20 GPa	464 ksi	1 mm/min; ISO 527
	3.58 GPa	519 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	160 MPa	23200 psi	2 mm/min; ISO 178
	165 MPa	23900 psi	2.6 mm/min, 100 mm span; ASTM D790
Flexural Modulus	3.30 GPa	479 ksi	2 mm/min; ISO 178
	3.50 GPa	508 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.320 J/cm	0.599 ft-lb/in	ASTM D256
	0.300 J/cm	0.562 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	11.74 J/cm	21.99 ft-lb/in	ASTM D256
	@Thickness 3.20 mm	@Thickness 0.126 in	
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	NB	NB	80*10*4; ISO 180/1A
	NB	NB	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	0.500 J/cm ²	2.38 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Gardner Impact	33.0 J	24.3 ft-lb	ASTM D3029
Dart Drop, Total Energy	38.0 J	28.0 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	55.0 Åµm/m-Å°C	30.6 Åµin/in-Å°F	ASTM E 831
	@Temperature -20.0 - 150 Å°C	@Temperature -4.00 - 302 Å°F	
	55.0 Åµm/m-Å°C	30.6 Åµin/in-Å°F	ISO 11359-2

Thermal Properties	Metric @Temperature -40.0 - 40.0 Â°C	English @Temperature -40.0 - 104 Â°F	Comments
CTE, linear, Transverse to Flow	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ftÂ²- Â°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	207 Â°C	405 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	190 Â°C	374 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/ Af
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	198 Â°C	388 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	211 Â°C	412 Â°F	Rate B/50; ASTM D1525
	211 Â°C	412 Â°F	Rate B/50; ISO 306
	212 Â°C	414 Â°F	Rate B/120; ISO 306
Glass Transition Temp, Tg	217 Â°C	423 Â°F	
Oxygen Index	44 %	44 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+17 ohm-cm	1.00e+17 ohm-cm	ASTM D257
Dielectric Constant	3.15	3.15	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	27.9 kV/mm	709 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	32.6 kV/mm	828 kV/in	in air; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0013	0.0013	ASTM D150

Electrical Properties	@Frequency 1000 Hz Metric	@Frequency 1000 Hz English	Comments
	0.0025	0.0025	ASTM D150
	@Frequency 2.45e+9 Hz	@Frequency 2.45e+9 Hz	

Descriptive Properties	Value	Comments
Ball Pressure Test, 75Â°C +/- 2Â°C	Passes	IEC 60695-10-2

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