

SABIC Innovative Plastics ULTEM 1010TC PEI (Asia Pacific)

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, enhanced flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing; color dependant, see UL Yellow Card. US FDA and EU Food Contact compliant, NSF 51 listing.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1010TC-PEI-Asia-Pacific.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	25 g/10 min @Load 5.00 kg, Temperature 220 ^o C	25 g/10 min @Load 11.0 lb, Temperature 428 ^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
	105 MPa	15200 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 %	Type I, 5 mm/min; ASTM D638
	60 %	60 %	5 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
Elongation at Yield	7.0 %	7.0 %	5 mm/min; ISO 527
			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
	174 MPa	25200 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	3.30 GPa	479 ksi	2 mm/min; ISO 178
	3.42 GPa	496 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.320 J/cm	0.599 ft-lb/in	ASTM D256
	0.350 J/cm	0.656 ft-lb/in	ASTM D256
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	ASTM D256
	11.74 J/cm	21.99 ft-lb/in	ASTM D256
	@Thickness 3.20 mm	@Thickness 0.126 in	ASTM D256
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	5.00 kJ/mÂ²	2.38 ft-lb/inÂ²	80*10*4; ISO 180/1A
	5.00 kJ/mÂ²	2.38 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Charpy Impact, Notched	0.300 J/cmÂ²	1.43 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Gardner Impact	33.0 J	24.3 ft-lb	ASTM D3029
Dart Drop, Total Energy	33.0 J	24.3 ft-lb	ASTM D3763
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	ASTM D3763
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	50.0 Âµm/m-Â°C	27.8 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	ISO 11359-2
	55.8 Âµm/m-Â°C	31.0 Âµin/in-Â°F	

Thermal Properties	Metric	English	Comments
	@Temperature -20.0 - 150 Â°C	@Temperature -4.00 - 302 Â°F	
CTE, linear, Transverse to Flow	50.0 Âµm/m-Â°C	27.8 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	50.0 Âµm/m-Â°C	27.8 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)	193 Â°C	379 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/af
	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; ISO 306
	212 Â°C	414 Â°F	Rate B/120; ISO 306
	218 Â°C	424 Â°F	Rate B/50; ASTM D1525
Glass Transition Temp, Tg	217 Â°C	423 Â°F	
UL RTI, Electrical	170 Â°C	338 Â°F	UL 746B
UL RTI, Mechanical with Impact	170 Â°C	338 Â°F	UL 746B
UL RTI, Mechanical without Impact	170 Â°C	338 Â°F	UL 746B
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	5VA	5VA	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	44 %	44 %	ASTM D2863

Optical Properties	Metric	English	Comments
Transmission, Visible	90 %	90 %	transparent; thickness not quantified

Electrical Properties	Metric	English	Comments
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Volume Resistivity Electrical Properties	1.00e+17 ohm-cm Metric	1.00e+17 ohm-cm English	ASTM D257 Comments
Dielectric Constant	3.15 @Frequency 1000 Hz	3.15 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	27.9 kV/mm @Thickness 1.60 mm	709 kV/in @Thickness 0.0630 in	in oil; ASTM D149
	32.6 kV/mm @Thickness 1.60 mm	828 kV/in @Thickness 0.0630 in	in air; ASTM D149
Dissipation Factor	0.0013 @Frequency 1000 Hz	0.0013 @Frequency 1000 Hz	ASTM D150
	0.0025 @Frequency 2.45e+9 Hz	0.0025 @Frequency 2.45e+9 Hz	ASTM D150
Arc Resistance	120 - 180 sec	120 - 180 sec	Tungsten; ASTM D495
Comparative Tracking Index	100 - 175 V	100 - 175 V	UL 746A
Hot Wire Ignition, HWI	60 - 120 sec	60 - 120 sec	UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	25.4 - 80.0 mm/min	1.00 - 3.15 in/min	UL 746A

Descriptive Properties	Value	Comments
NBS Smoke Density, Flaming, Ds 4 min	2	ASTM E 662

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