

SABIC Innovative Plastics ULTEM 1010F PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, enhanced flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing. US FDA and EU Food Contant compliant, NSF 51 listing. Effective June 2007, this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU1010.

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D792
Water Absorption	0.25 %	0.25 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption at Equilibrium	1.25 %	1.25 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	17.8 g/10 min @Load 6.60 kg, Temperature 337 Â°C	17.8 g/10 min @Load 14.6 lb, Temperature 639 Â°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	109	109	ASTM D785
Tensile Strength, Yield	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	60 %	60 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	3.58 GPa	519 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	165 MPa	23900 psi	2.6 mm/min, 100 mm span; ASTM D790
Flexural Modulus	3.51 GPa	509 ksi	2.6 mm/min, 100 mm span; ASTM D790
Izod Impact, Notched	0.320 J/cm	0.599 ft-lb/in	ASTM D256
	11.74 J/cm @Thickness 3.20 mm	21.99 ft-lb/in @Thickness 0.126 in	ASTM D256
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812

Mechanical Properties	Metric	English	Comments
Charpy Impact	33 J	24 FT-LB	ASTM D3029
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	55.8 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature -20.0 - 150 $\text{Å}^\circ\text{C}$	31.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature -4.00 - 302 $\text{Å}^\circ\text{F}$	ASTM E 831
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	207 $\text{Å}^\circ\text{C}$ @Thickness 6.40 mm	405 $\text{Å}^\circ\text{F}$ @Thickness 0.252 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	198 $\text{Å}^\circ\text{C}$ @Thickness 6.40 mm	388 $\text{Å}^\circ\text{F}$ @Thickness 0.252 in	unannealed; ASTM D648
Vicat Softening Point	218 $\text{Å}^\circ\text{C}$	424 $\text{Å}^\circ\text{F}$	Rate B/50; ASTM D1525
Glass Transition Temp, Tg	217 $\text{Å}^\circ\text{C}$	423 $\text{Å}^\circ\text{F}$	
UL RTI, Electrical	170 $\text{Å}^\circ\text{C}$	338 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	170 $\text{Å}^\circ\text{C}$	338 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	170 $\text{Å}^\circ\text{C}$	338 $\text{Å}^\circ\text{F}$	UL 746B
Flammability, UL94	V-0 @Thickness 0.750 mm	V-0 @Thickness 0.0295 in	UL 94
	5VA @Thickness 3.00 mm	5VA @Thickness 0.118 in	UL 94
Oxygen Index	44 %	44 %	ASTM D2863

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

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+17 ohm-cm	1.00e+17 ohm-cm	ASTM D257
Dielectric Constant	3.15 @Frequency 1000 Hz	3.15 @Frequency 1000 Hz	ASTM D150
	28.0 kV/mm	711 kV/in	

Dielectric Strength Electrical Properties	Metric @ Thickness 1.60 mm	English @ Thickness 0.0630 in	In oil: ASTM D149 Comments
	32.7 kV/mm @Thickness 1.60 mm	831 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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