

## SABIC Innovative Plastics ULTEM 1010R PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Enhanced flow Polyetherimide (Tg 217C) with internal mold release. ECO Conforming, UL94 V0 and 5VA listing.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-ULTEM-1010R-PEI.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1010R-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	17.8 g/10 min	ASTM D1238
	@Load 6.60 kg, Temperature 337 Â°C	@Load 14.6 lb, Temperature 639 Â°F	

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
	14.95 J/cm	28.01 ft-lb/in	
	@Thickness 3.20 mm	@Thickness 0.126 in	ASTM D256
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812
Gardner Impact	33.0 J	24.3 ft-lb	ASTM D3029

Taber Abrasion, mm/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044
Mechanical Properties	Metric	English	Comments

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

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
Dielectric Strength	28.0 kV/mm @Thickness 1.60 mm	711 kV/in @Thickness 0.0630 in	in oil; ASTM D149
	32.7 kV/mm @Thickness 1.60 mm	831 kV/in @Thickness 0.0630 in	in air; ASTM D149
	0.0013	0.0013	

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