

## SABIC Innovative Plastics ULTEM 1000RV PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Standard flow Polyetherimide (Tg 217C) with internal mold release. ECO Conforming, UL94 V0 and 5VA listing; color dependant, see UL Yellow Card.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-ULTEM-1000RV-PEI.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1000RV-PEI.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D792
Density	1.25 g/cc	0.0452 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption	0.700 %	0.700 %	23 <sup>o</sup> C / 50% RH; ISO 62
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	9.7 g/10 min @Load 6.60 kg, Temperature 337 <sup>o</sup> C	9.7 g/10 min @Load 14.6 lb, Temperature 639 <sup>o</sup> F	ASTM D1238
Melt Index of Compound	13 g/10 min @Load 5.00 kg, Temperature 220 <sup>o</sup> C	13 g/10 min @Load 11.0 lb, Temperature 428 <sup>o</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	85.0 MPa	12300 psi	5 mm/min; ISO 527
	90.0 MPa	13100 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
Elongation at Yield	6.0 %	6.0 %	5 mm/min; ISO 527
	7.0 %	7.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	3.20 GPa	464 ksi	1 mm/min; ISO 527

Mechanical Properties	Metric	English	5 mm/min: ASTM D638 Comments
Flexural Yield Strength	160 MPa	23200 psi	2 mm/min; ISO 178
	173 MPa	25100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	3.30 GPa	479 ksi	2 mm/min; ISO 178
	3.43 GPa	497 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
	0.550 J/cm @Temperature -30.0 Â°C	1.03 ft-lb/in @Temperature -22.0 Â°F	ASTM D256
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	6.00 kJ/mÂ²	2.86 ft-lb/inÂ²	80*10*4; ISO 180/1A
	6.00 kJ/mÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Charpy Impact, Notched	0.400 J/cmÂ²	1.90 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA

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	
	55.8 Âµm/m-Â°C	31.0 Âµin/in-Â°F	ASTM E 831
	@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	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	54.0 Âµm/m-Â°C	30.0 Âµin/in-Â°F	ASTM E 831
	@Temperature -20.0 - 150 Â°C	@Temperature -4.00 - 302 Â°F	
Deflection Temperature at 1.8 MPa (264 psi)	215 Â°C	419 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	201 Â°C @Thickness 6.40 mm	394 Â°F @Thickness 0.252 in	unannealed; ASTM D648

Vicat Softening Point Thermal Properties	211 Â°C Metric	412 Â°F English	Rate B/120: ISO 306 Comments
	215 Â°C	419 Â°F	Rate B/50; 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-2	V-2	UL 94
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	V-1	V-1	UL 94
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	V-0	V-0	UL 94
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	5VA	5VA	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	47 %	47 %	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	
	32.7 kV/mm	831 kV/in	in air; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0013	0.0013	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	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

Electrical Properties	Metric	English	Comments
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	0.7	ASTM E 662

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