

## SABIC Innovative Plastics ULTEM 1000EF PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Transparent, enhanced flow Polyetherimide (Tg 217C) with internal mold release. ECO Conforming, U.S. FDA and EU Food Contact compliant.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-ULTEM-1000EF-PEI.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1000EF-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 <sup>3</sup>	ISO 1183
Water Absorption	0.25 % @Time 86400 sec	0.25 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.700 %	0.700 %	23 <sup>o</sup> 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	0.0050 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	12 g/10 min @Load 6.60 kg, Temperature 337 <sup>o</sup> C	12 g/10 min @Load 14.6 lb, Temperature 639 <sup>o</sup> F	ASTM D1238
Melt Index of Compound	17 g/10 min @Load 5.00 kg, Temperature 360 <sup>o</sup> C	17 g/10 min @Load 11.0 lb, Temperature 680 <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	Type I, 5 mm/min; ASTM D638
	85.0 MPa	12300 psi	5 mm/min; ISO 527
Tensile Strength, Yield	105 MPa	15200 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	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
	3.59 GPa	521 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	160 MPa	23200 psi	2 mm/min; ISO 178
	165 MPa	23900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	3.30 GPa	479 ksi	2 mm/min; ISO 178
	3.52 GPa	511 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
	13.35 J/cm	25.01 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)	6.00 kJ/m <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	6.00 kJ/m <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB	NB	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	0.400 J/cm <sup>2</sup>	1.90 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.400 J/cm <sup>2</sup>	1.90 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	

Mechanical Properties	Metric	English	Comments
Dart Drop, Total Energy	@Temperature 23.0 Â°C	28.0 ft-lb @Temperature 73.4 Â°F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 150 Â°C	@Temperature -40.0 - 302 Â°F	
	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 150 Â°C	@Temperature 73.4 - 302 Â°F	
CTE, linear, Transverse to Flow	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 150 Â°C	@Temperature -40.0 - 302 Â°F	
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ftÂ²- Â°F	ASTM C177
	0.240 W/m-K	1.67 BTU-in/hr-ftÂ²- Â°F	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	198 Â°C	388 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	200 Â°C	392 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	207 Â°C	405 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	210 Â°C	410 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	188 Â°C	370 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	190 Â°C	374 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	199 Â°C	390 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	201 Â°C	394 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	

Vicat Softening Point Thermal Properties	211 Â°C Metric	412 Â°F English	Rate B/50; ISO 306 Comments
	212 Â°C	414 Â°F	Rate B/120; ISO 306
	215 Â°C	419 Â°F	Rate A/50; ISO 306
	219 Â°C	426 Â°F	Rate B/50; ASTM D1525
Glass Transition Temp, Tg	217 Â°C	423 Â°F	

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

Descriptive Properties	Value	Comments
Ball Pressure Test, 125Â°C +/- 2Â°C	Passes	IEC 60695-10-2

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