

SABIC Innovative Plastics ULTEM 1000EF PEI (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, enhanced flow Polyetherimide (Tg 217C) with internal mold release. Resin is RoHS. US FDA and EU Food Contact compliant.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1000EF-PEI-Europe-Africa-Middle-East.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 %	0.25 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption	0.700 %	0.700 %	23°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	
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	12 g/10 min	12 g/10 min	ASTM D1238
	@Load 6.60 kg, Temperature 337 °C	@Load 14.6 lb, Temperature 639 °F	
Melt Index of Compound	17 g/10 min	17 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 360 °C	@Load 11.0 lb, Temperature 680 °F	

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

Elongation at Break Mechanical Properties	60 % Metric	60 % English	Type I, 5 mm/min; ASTM D638 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 ²	2.86 ft-lb/in ²	80*10*4; ISO 180/1A
	6.00 kJ/m ²	2.86 ft-lb/in ²	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 ²	1.90 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.400 J/cm ²	1.90 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	38.0 J	28.0 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	55.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 150 $^\circ\text{C}$	@Temperature -40.0 - 302 $^\circ\text{F}$	
	55.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $^\circ\text{C}$	@Temperature 73.4 - 302 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	55.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 150 $^\circ\text{C}$	@Temperature -40.0 - 302 $^\circ\text{F}$	
	55.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $^\circ\text{C}$	@Temperature 73.4 - 302 $^\circ\text{F}$	
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ft ² - $^\circ\text{F}$	ASTM C177
	0.240 W/m-K	1.67 BTU-in/hr-ft ² - $^\circ\text{F}$	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	198 $^\circ\text{C}$	388 $^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	200 $^\circ\text{C}$	392 $^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
	207 $^\circ\text{C}$	405 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	210 $^\circ\text{C}$	410 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	188 $^\circ\text{C}$	370 $^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	190 $^\circ\text{C}$	374 $^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	199 $^\circ\text{C}$	390 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	201 $^\circ\text{C}$	394 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	211 $^\circ\text{C}$	412 $^\circ\text{F}$	Rate B/50; ISO 306
	212 $^\circ\text{C}$	414 $^\circ\text{F}$	Rate B/120; ISO 306
	215 $^\circ\text{C}$	419 $^\circ\text{F}$	Rate A/50; ISO 306
	219 $^\circ\text{C}$	426 $^\circ\text{F}$	Rate B/50; ASTM D1525

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	217 °C	423 °F	

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

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

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