

## SABIC Innovative Plastics ULTEM 4000 PEI (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Glass fiber, PTFE, and Graphite filled, standard flow Polyetherimide (Tg 217C). Resin is RoHS compliant. UL94 V0 listing.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-ULTEM-4000-PEI-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-4000-PEI-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Density	1.68 g/cc	0.0607 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption	0.300 %	0.300 %	23 <sup>o</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.70 %	0.70 %	ISO 62
Linear Mold Shrinkage, Flow	0.0010 - 0.0030 cm/cm	0.0010 - 0.0030 in/in	on Tensile Bar; SABIC Method
Melt Index of Compound	5.0 g/10 min @Load 5.00 kg, Temperature 360 <sup>o</sup> C	5.0 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
Hardness, H358/30	140 MPa	20300 psi	ISO 2039-1
Tensile Strength at Break	90.0 MPa	13100 psi	5 mm/min; ISO 527
Elongation at Break	1.0 %	1.0 %	5 mm/min; ISO 527
Tensile Modulus	9.90 GPa	1440 ksi	1 mm/min; ISO 527
Flexural Strength	120 MPa	17400 psi	2 mm/min; ISO 178
Flexural Modulus	7.00 GPa	1020 ksi	2 mm/min; ISO 178
Izod Impact, Unnotched (ISO)	15.0 kJ/m <sup>2</sup>	7.14 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	15.0 kJ/m <sup>2</sup> @Temperature -30.0 <sup>o</sup> C	7.14 ft-lb/in <sup>2</sup> @Temperature -22.0 <sup>o</sup> F	80*10*4; ISO 180/1U
Charpy Impact, Notched	0.800 J/cm <sup>2</sup>	3.81 ft-lb/in <sup>2</sup>	ISO 179/2C
	0.800 J/cm <sup>2</sup> @Temperature -30.0 <sup>o</sup> C	3.81 ft-lb/in <sup>2</sup> @Temperature -22.0 <sup>o</sup> F	ISO 179/2C
K (wear) Factor	24.2 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	12.0 x 10 <sup>-10</sup> in <sup>3</sup> - min/ft-lb-hr	PV=2000 psi-fpm vs Self; SABIC Method

Mechanical Properties	Metric	English	Comments
Limiting Pressure Velocity	2.30 MPa-m/sec	65700 psi-ft/min	0.51 m/s; SABIC Method
Taber Abrasion, mg/1000 Cycles	30	30	CS-17, 1 kg; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	8.33 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 73.4 - 302 $\text{Å}^\circ\text{F}$	
CTE, linear, Transverse to Flow	50.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 73.4 - 302 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.430 W/m-K	2.98 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	210 $\text{Å}^\circ\text{C}$	410 $\text{Å}^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	205 $\text{Å}^\circ\text{C}$	401 $\text{Å}^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
Vicat Softening Point	215 $\text{Å}^\circ\text{C}$	419 $\text{Å}^\circ\text{F}$	Rate B/50; ISO 306
	220 $\text{Å}^\circ\text{C}$	428 $\text{Å}^\circ\text{F}$	Rate B/120; ISO 306
	225 $\text{Å}^\circ\text{C}$	437 $\text{Å}^\circ\text{F}$	Rate A/50; ISO 306
Glass Transition Temp, Tg	217 $\text{Å}^\circ\text{C}$	423 $\text{Å}^\circ\text{F}$	
UL RTI, Electrical	105 $\text{Å}^\circ\text{C}$	221 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	105 $\text{Å}^\circ\text{C}$	221 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	105 $\text{Å}^\circ\text{C}$	221 $\text{Å}^\circ\text{F}$	UL 746B
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 0.840 mm	@Thickness 0.0331 in	
Oxygen Index	48 %	48 %	ISO 4589
Glow Wire Test	960 $\text{Å}^\circ\text{C}$	1760 $\text{Å}^\circ\text{F}$	IEC 60695-2-12
	@Thickness 3.20 mm	@Thickness 0.126 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093
Surface Resistance	$\geq 1.00\text{e}+15$ ohm	$\geq 1.00\text{e}+15$ ohm	ROA; IEC 60093

Electrical Properties	Metric	English	Comments
Dielectric Constant	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	6.8	6.8	IEC 60250
Dissipation Factor	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	IEC 60250
	0.013	0.013	IEC 60250
Comparative Tracking Index	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	0.022	0.022	IEC 60250
Comparative Tracking Index	>= 100 V	>= 100 V	IEC 60112
	200 V	200 V	IEC 60112

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

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