

SABIC Innovative Plastics Ultem 1000V PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing; color dependant, see UL Yellow Card. US FDA and EU Food Contact compliant, NSF 51 listing, compliant in natural color. Effective June, 2007 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU1000. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Ultem-1000V-PEI.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D 792
Density	1.27 g/cc	0.0459 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.70 %	0.70 %	23 ^o C / 50% RH; ISO 62
Water Absorption at Saturation	1.25 % @Temperature 23.0 ^o C	1.25 % @Temperature 73.4 ^o F	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	9.0 g/10 min @Load 6.60 kg, Temperature 337 ^o C	9.0 g/10 min @Load 14.6 lb, Temperature 639 ^o F	ASTM D 1238
	13 g/10 min @Load 5.00 kg, Temperature 220 ^o C	13 g/10 min @Load 11.0 lb, Temperature 428 ^o F	[cm ³ /10 min] Melt Volume Rate; 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 D 638
Tensile Strength, Yield	105 MPa	15200 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D 638
Elongation at Break	60 %	60 %	Type I, 5 mm/min; ASTM D 638
	60 %	60 %	5 mm/min; ISO 527
Elongation at Yield	7.0 %	7.0 %	Type I, 5 mm/min; ASTM D 638

Mechanical Properties	Metric	English	Comments
	3.58 GPa	519 ksi	5 mm/min; ASTM D 638
Flexural Yield Strength	160 MPa	23200 psi	1.3 mm/min, 50 mm span; ASTM D 790
	160 MPa	23200 psi	2 mm/min; ISO 178
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 D 790
Izod Impact, Notched	0.530 J/cm @Temperature 23.0 Â°C	0.993 ft-lb/in @Temperature 73.4 Â°F	ASTM D 256
	0.530 J/cm @Temperature -30.0 Â°C	0.993 ft-lb/in @Temperature -22.0 Â°F	ASTM D 256
Izod Impact, Unnotched	13.35 J/cm @Temperature 23.0 Â°C	25.01 ft-lb/in @Temperature 73.4 Â°F	ASTM D 4812
Izod Impact, Notched (ISO)	6.00 kJ/mÂ² @Temperature 23.0 Â°C	2.86 ft-lb/inÂ² @Temperature 73.4 Â°F	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 @Temperature 23.0 Â°C	1.90 ft-lb/inÂ² @Temperature 73.4 Â°F	V-notch 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 @Temperature -40.0 - 40.0 Â°C	27.8 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
	55.8 Âµm/m-Â°C @Temperature -20.0 - 150 Â°C	31.0 Âµin/in-Â°F @Temperature -4.00 - 302 Â°F	ASTME 831
CTE, linear, Transverse to Flow	50.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	27.8 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2

Thermal Properties	Metric $\mu\text{m/m-}^{\circ}\text{C}$	English $\text{in/in-}^{\circ}\text{F}$	Comments
	@Temperature -20.0 - 150 $^{\circ}\text{C}$	@Temperature -4.00 - 302 $^{\circ}\text{F}$	ASTM E 831
Deflection Temperature at 1.8 MPa (264 psi)	215 $^{\circ}\text{C}$	419 $^{\circ}\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	201 $^{\circ}\text{C}$	394 $^{\circ}\text{F}$	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	211 $^{\circ}\text{C}$	412 $^{\circ}\text{F}$	Rate B/120; ISO 306
	215 $^{\circ}\text{C}$	419 $^{\circ}\text{F}$	Rate B/50; ISO 306
	218 $^{\circ}\text{C}$	424 $^{\circ}\text{F}$	Rate B/50; ASTM D 1525
Glass Transition Temp, Tg	217 $^{\circ}\text{C}$	423 $^{\circ}\text{F}$	
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 %	LOI; ASTM D 2863

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

Electrical Properties	Metric	English	Comments
Arc Resistance	120 - 180 sec	120 - 180 sec	Tungsten, PLC code 5; ASTM D 495
Comparative Tracking Index	100 - 175 V	100 - 175 V	PLC code 4; UL 746A
Hot Wire Ignition, HWI	60 - 120 sec	60 - 120 sec	PLC code 1; UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	surface, PLC code 3; UL 746A
High Voltage Arc-Tracking Rate, HVTR	25.4 - 80.0 mm/min	1.00 - 3.15 in/min	PLC code 2; UL 746A

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