

SABIC Innovative Plastics ULTEM 1010K PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, high flow Polyetherimide (Tg 217C). ECO Conforming.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-1010K-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 ³	ISO 1183
Moisture Absorption	0.700 %	0.700 %	23 ^o 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	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	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	17.8 g/10 min	17.8 g/10 min	ASTM D1238
	@Load 6.60 kg, Temperature 337 ^o C	@Load 14.6 lb, Temperature 639 ^o F	
Melt Index of Compound	25 g/10 min	25 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 360 ^o C	@Load 11.0 lb, Temperature 680 ^o F	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	85.0 MPa	12300 psi	5 mm/min; ISO 527
	105 MPa	15200 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

Mechanical Properties	7.0% Metric	7.0% English	Type I, 5 mm/min; ASTM D638 Comments
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	0.320 J/cm	0.599 ft-lb/in	ASTM D256
	0.350 J/cm	0.656 ft-lb/in	
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	ASTM D256
	11.75 J/cm	22.01 ft-lb/in	
	@Thickness 3.20 mm	@Thickness 0.126 in	ASTM D256
Izod Impact, Unnotched	13.35 J/cm	25.01 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	5.00 kJ/mÂ²	2.38 ft-lb/inÂ²	80*10*4; ISO 180/1A
	5.00 kJ/mÂ²	2.38 ft-lb/inÂ²	
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB	NB	
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	80*10*4; ISO 180/1U
Charpy Impact, Notched	0.300 J/cmÂ²	1.43 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	33.0 J	24.3 ft-lb	
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	50.0 Âµm/m-Â°C	27.8 Âµin/in-Â°F	
	@Temperature 23.0 - 150 Â°C	@Temperature 73.4 - 302 Â°F	ISO 11359-2
	55.0 Âµm/m-Â°C	30.6 Âµin/in-Â°F	

Thermal Properties	Metric	English	ASTM E 831 Comments
	@ Temperature -40.0 - 150 Â°C	@ Temperature -40.0 - 302 Â°F	
CTE, linear, Transverse to Flow	50.0 Âµm/m-Â°C	27.8 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 150 Â°C	@Temperature 73.4 - 302 Â°F	
	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	
Deflection Temperature at 0.46 MPa (66 psi)	200 Â°C	392 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	205 Â°C	401 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	207 Â°C	405 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	190 Â°C	374 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	193 Â°C	379 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/ Af
	197 Â°C	387 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	199 Â°C	390 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	211 Â°C	412 Â°F	Rate B/50; ISO 306
	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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