

SABIC Innovative Plastics ULTEM 9090 PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Polyetherimide Blend with improved Ductility and Detergent resistance. Meets FAR 25.853 and OSU 55/55 heat release and provides low toxicity, smoke and flame evolution.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-9090-PEI.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.28 g/cc	1.28 g/cc	ASTM D792
Density	1.28 g/cc	0.0462 lb/in ³	ISO 1183
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	10 g/10 min @Load 6.60 kg, Temperature 337 Â°C	10 g/10 min @Load 14.6 lb, Temperature 639 Â°F	ASTM D1238
Melt Index of Compound	14 g/10 min @Load 5.00 kg, Temperature 360 Â°C	14 g/10 min @Load 11.0 lb, Temperature 680 Â°F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	80.0 MPa	11600 psi	50 mm/min; ISO 527
	90.0 MPa	13100 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	95.0 MPa	13800 psi	Type I, 5 mm/min; ASTM D638
	97.0 MPa	14100 psi	50 mm/min; ISO 527
Elongation at Break	80 %	80 %	50 mm/min; ISO 527
	85 %	85 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	Type I, 5 mm/min; ASTM D638
	7.0 %	7.0 %	50 mm/min; ISO 527
Tensile Modulus	2.90 GPa	421 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	136 MPa	19700 psi	2 mm/min; ISO 178
	140 MPa	20300 psi	1.3 mm/min, 50 mm span; ASTM D790

Electrical Modulus Mechanical Properties	2.80 GPa Metric	406 ksi English	2 mm/min; ISO 178 Comments
	3.00 GPa	435 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.700 J/cm	1.31 ft-lb/in	ASTM D256
	33.0 J/cm	61.8 ft-lb/in	ASTM D256
	@Thickness 3.20 mm	@Thickness 0.126 in	
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, Notched	1.10 J/cm ²	5.23 ft-lb/in ²	ISO 179/2C
Dart Drop, Total Energy	88.0 J	64.9 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	88.0 J	64.9 ft-lb	ASTM D3763
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	99.0 J	73.0 ft-lb	ASTM D3763
	@Temperature 0.000 °C	@Temperature 32.0 °F	
Impact	90	90	Instrumented Impact Ductility, %; ASTM D3763
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	100	100	Instrumented Impact Ductility, %; ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	100	100	Instrumented Impact Ductility, %; ASTM D3763
	@Temperature 0.000 °C	@Temperature 32.0 °F	

Thermal Properties	Metric	English	Comments
	50.0 Åµm/m-Å°C	27.8 Åµin/in-Å°F	

CTE, linear, Parallel to Flow Thermal Properties	Metric @ Temperature 23.0 - 150 Â°C	English @ Temperature 73.4 - 302 Â°F	ISO 11359-2 Comments
	56.0 Âµm/m-Â°C	31.1 Âµin/in-Â°F	ASTM E 831
	@Temperature -20.0 - 150 Â°C	@Temperature -4.00 - 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 -20.0 - 150 Â°C	@Temperature -4.00 - 302 Â°F	
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ftÂ²- Â°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	205 Â°C	401 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	214 Â°C	417 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
	204 Â°C	399 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	212 Â°C	414 Â°F	Rate B/50; ISO 306
	212 Â°C	414 Â°F	Rate B/120; ISO 306
	219 Â°C	426 Â°F	Rate A/50; ISO 306
Oxygen Index	46 %	46 %	ASTM D2863

Descriptive Properties	Value	Comments
NBS Smoke Density, Flaming, Ds 4 min	0.7	ASTM E 662
OSU total heat release (2 minute test)	15kW-min/m^2	FAR 25.853
OSU peak heat release rate (5 minute test)	45kW/m^2	FAR 25.853
Vertical Burn a (60s) passes at	1sec	FAR 25.853

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