

Polymer Resources PEI-GP1 Polyetherimide, Flame Retardant

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Polyetherimide, Flame Retardant, High Heat Resistance
 Process: Injection Molding
 Notes: All physical, mechanical and thermal testing conducted on 1/8-inch thick, un-pigmented, test samples. Information provided by Polymer Resources Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Polymer-Resources-PEI-GP1-Polyetherimide-Flame-Retardant.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D792
Water Absorption	0.25 % @Time 86400 sec	0.25 % @Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	1.3 %	1.3 %	ASTM D570
Linear Mold Shrinkage	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	ASTM D955
Melt Flow	6.0 - 22 g/10 min @Load 6.70 kg, Temperature 337 °C	6.0 - 22 g/10 min @Load 14.8 lb, Temperature 639 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	109	109	ASTM D785
Tensile Strength at Break	103 MPa	15000 psi	ASTM D638
Tensile Strength, Yield	103 MPa	15000 psi	ASTM D638
Elongation at Break	60 %	60 %	ASTM D638
Elongation at Yield	7.0 %	7.0 %	ASTM D638
Tensile Modulus	3.52 GPa	510 ksi	ASTM D638
Flexural Strength	145 MPa	21000 psi	ASTM D790
Flexural Modulus	3.24 GPa	470 ksi	ASTM D790
Poissons Ratio	0.36	0.36	ASTM D638
Izod Impact, Notched	0.534 J/cm @Temperature 22.8 °C	1.00 ft-lb/in @Temperature 73.0 °F	ASTM D256
Izod Impact, Unnotched	13.3 J/cm @Temperature 22.8 °C	25.0 ft-lb/in @Temperature 73.0 °F	ASTM D4812

Mechanical Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
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CTE, linear, Parallel to Flow	55.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	31.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E831
	@Temperature -20.0 - 150 $^\circ\text{C}$	@Temperature -4.00 - 302 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	54.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E831
	@Temperature -20.0 - 150 $^\circ\text{C}$	@Temperature -4.00 - 302 $^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	204 $^\circ\text{C}$	400 $^\circ\text{F}$	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	196 $^\circ\text{C}$	385 $^\circ\text{F}$	ASTM D648
Vicat Softening Point	218 $^\circ\text{C}$	425 $^\circ\text{F}$	120 $^\circ\text{C}/\text{h}$, 50 N; ASTM D1525
UL RTI, Electrical	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
UL RTI, Mechanical with Impact	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
UL RTI, Mechanical without Impact	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	105 $^\circ\text{C}$	221 $^\circ\text{F}$	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
Flammability, UL94	V-0	V-0	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
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Volume Resistivity	1.00e+17 ohm-cm	1.00e+17 ohm-cm	ASTM D257
	3.15	3.15	

Dielectric Constant Electrical Properties	Metric @Frequency 100 Hz	English @Frequency 100 Hz	ASTM D150 Comments
	3.15	3.15	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	19.7 kV/mm	500 kV/in	in oil; ASTM D149
	@Thickness 3.17 mm	@Thickness 0.125 in	
	27.6 kV/mm	700 kV/in	in oil; ASTM D149
	@Thickness 1.59 mm	@Thickness 0.0625 in	
	32.3 kV/mm	820 kV/in	in air; ASTM D149
	@Thickness 1.59 mm	@Thickness 0.0625 in	
Dissipation Factor	0.0012	0.0012	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0015	0.0015	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.0025	0.0025	ASTM D150
	@Frequency 2.00e+9 Hz	@Frequency 2.00e+9 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	332 - 399 °C	630 - 750 °F	
Middle Barrel Temperature	338 - 399 °C	640 - 750 °F	
Front Barrel Temperature	343 - 399 °C	650 - 750 °F	
Melt Temperature	338 - 399 °C	640 - 750 °F	
Mold Temperature	107 - 177 °C	225 - 350 °F	
Drying Temperature	143 - 149 °C	290 - 300 °F	
Dry Time	3.00 - 4.00 hour	3.00 - 4.00 hour	

Descriptive Properties	Value	Comments
Vent	0.001	

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