SABIC Innovative Plastics Lexan® HPH4704 PPC (Asia Pacific)

Category : Polymer , Thermoplastic , Polyphthalate Carbonate

Material Notes:

High heat specialty polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO, steam, gamma and e-beam sterilizable.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPH4704-PPC-Asia-Pacific.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in³	ASTM D792
	1.20 g/cc	0.0434 lb/in³	ISO 1183
Water Absorption	0.19 % @Time 86400 sec	0.19 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.350 %	0.350 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.16 %	0.16 %	ISO 62
Linear Mold Shrinkage, Flow	0.0080 - 0.010 cm/cm @Thickness 3.20 mm	0.0080 - 0.010 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	2.0 g/10 min @Load 1.20 kg, Temperature 300 °C	2.0 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	2.0 g/10 min @Load 1.20 kg, Temperature 300 °C	2.0 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	92	92	ASTM D785
Hardness, Rockwell R	127	127	ASTM D785
Tensile Strength at Break	68.0 MPa	9860 psi	50 mm/min; ISO 527
	77.0 MPa	11200 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	65.0 MPa	9430 psi	Type I, 50 mm/min; ASTM D638
	68.0 MPa	9860 psi	50 mm/min; ISO 527
Elongation at Break	78 %	78 %	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	102 %	102 %	50 mm/min; ISO 527
Elongation at Yield	7.0 %	7.0 %	50 mm/min; ISO 527
	8.0 %	8.0 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.10 GPa	305 ksi	5 mm/min; ASTM D638
	2.17 GPa	315 ksi	1 mm/min; ISO 527
Flexural Yield Strength	66.0 MPa	9570 psi	2 mm/min; ISO 178
	97.0 MPa	14100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.07 GPa	300 ksi	2 mm/min; ISO 178
	2.33 GPa	338 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	3.70 J/cm	6.93 ft-lb/in	ASTM D256
	0.840 J/cm @Temperature -30.0 °C	1.57 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	32.0 J/cm	59.9 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	7.00 kJ/m²	3.33 ft-lb/in²	80*10*4; ISO 180/1A
	6.00 kJ/m² @Temperature -30.0 °C	2.86 ft-lb/in² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Charpy Impact, Notched	0.900 J/cm²	4.28 ft-lb/in²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Tensile Impact Strength	577 kJ/m²	275 ft-lb/in²	Type S; ASTM D1822
Dart Drop, Total Energy	149 J	110 ft-lb	ASTM D3029
	74.0 J @Temperature 23.0 °C	54.6 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	60.0 µm/m-°C @Temperature -40.0 - 40.0 °C	33.3 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	60.0 µm/m-°C @Temperature -40.0 - 40.0 °C	33.3 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2

Thermal Properties	Metric	English	Comments
CTE, linear, Transverse to Flow	60.0 µm/m-°C	33.3 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
	60.0 µm/m-°C @Temperature -40.0 - 40.0 °C	33.3 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
Specific Heat Capacity	1.25 J/g-°C	0.299 BTU/lb-°F	ASTM C351
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft²-°F	ASTM C177
Deflection Temperature at 1.8 MPa (264 psi)	150 °C	302 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	148 °C @Thickness 3.20 mm	298 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	165 °C	329 °F	Rate B/50; ISO 306
	167 °C	333 °F	Rate B/120; ISO 306
	173 °C	343 °F	Rate B/50; ASTM D1525
UL RTI, Electrical	130 °C	266 °F	UL 746B
UL RTI, Mechanical with Impact	130 °C	266 °F	UL 746B
UL RTI, Mechanical without Impact	130 °C	266 °F	UL 746B
Flammability, UL94	HB @Thickness 1.47 mm	HB @Thickness 0.0579 in	UL 94

Optical Properties	Metric	English	Comments
Refractive Index	1.60	1.60	ASTM D542
Haze	1.0 % @Thickness 2.54 mm	1.0 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	85 %	85 %	2.54 mm; ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 2.50e+17 ohm-cm	>= 2.50e+17 ohm-cm	ASTM D257
Dielectric Constant	3.1 @Frequency 1.00e+6 Hz	3.1 @Frequency 1.00e+6 Hz	ASTM D150
	3.27	3.27	

Electrical Properties	Metric	English	Comments
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	ASTM D150
Dielectric Strength	20.0 kV/mm @Thickness 3.20 mm	508 kV/in @Thickness 0.126 in	in air; ASTM D149
Dissipation Factor	0.0016 @Frequency 50.0 - 60.0 Hz	0.0016 @Frequency 50.0 - 60.0 Hz	ASTM D150
	0.026 @Frequency 100 Hz	0.026 @Frequency 100 Hz	ASTM D150
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten; ASTM D495
Comparative Tracking Index	175 - 250 V	175 - 250 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	UL 746A

Descriptive Properties	Value	Comments
Specific Volume	0.83cm^3/g	ASTM D792

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