SABIC Innovative Plastics Lexan® HPH4504H PPC

Category : Polymer , Thermoplastic , Polyphthalate Carbonate

Material Notes:

High heat specialty polycarbonate with enhanced autoclavability. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 of 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-HPH4504H-PPC.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	0.16 % @Time 86400 sec	0.16 % @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	0.0070 - 0.0080 cm/cm @Thickness 3.20 mm	0.0070 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	3.0 g/10 min @Load 1.20 kg, Temperature 300 °C	3.0 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	3.0 g/10 min @Load 1.20 kg, Temperature 300 °C	3.0 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm^3/10 min]; ISO 1133
	12 g/10 min @Load 2.16 kg, Temperature 330 °C	12 g/10 min @Load 4.76 lb, Temperature 626 °F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85	85	ASTM D785
Hardness, Rockwell R	122	122	ASTM D785
Tensile Strength at Break	65.0 MPa	9430 psi	50 mm/min; ISO 527
	71.0 MPa	10300 psi	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	65.0 MPa	9430 psi	Type I, 50 mm/min; ASTM D638
	65.0 MPa	9430 psi	5 mm/min; ISO 527
	65.0 MPa	9430 psi	50 mm/min; ISO 527
Elongation at Break	7.0 %	7.0 %	50 mm/min; ISO 527
	122 %	122 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	Type I, 50 mm/min; ASTM D638
	7.0 %	7.0 %	50 mm/min; ISO 527
Tensile Modulus	2.09 GPa	303 ksi	5 mm/min; ASTM D638
	2.26 GPa	328 ksi	1 mm/min; ISO 527
Flexural Yield Strength	66.0 MPa	9570 psi	2 mm/min; ISO 178
	95.0 MPa	13800 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.02 GPa	293 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.12 GPa	307 ksi	2 mm/min; ISO 178
Izod Impact, Notched	6.40 J/cm	12.0 ft-lb/in	ASTM D256
	1.44 J/cm @Temperature -30.0 °C	2.70 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	32.04 J/cm	60.02 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	13.0 kJ/m²	6.19 ft-lb/in²	80*10*4; ISO 180/1A
	11.0 kJ/m² @Temperature -30.0 °C	5.23 ft-lb/in² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Charpy Impact, Notched	1.50 J/cm²	7.14 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
	73.0 J @Temperature 23.0 °C	53.8 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
	60.0 µm/m-°C	33.3 µin/in-°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	@Temperature -40.0 - 40.0 °C	@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
	91.8 µm/m-°C @Temperature -40.0 - 95.0 °C	51.0 µin/in-°F @Temperature -40.0 - 203 °F	ASTM E 831
CTE, linear, Transverse 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
Specific Heat Capacity	1.26 J/g-°C	0.301 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)	132 °C	270 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	143 °C @Thickness 3.20 mm	289 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	154 °C	309 °F	Rate B/50; ISO 306
	155 °C	311 °F	Rate B/120; ISO 306
	160 °C	320 °F	Rate B/50; ASTM D1525
UL RTI, Electrical	125 °C	257 °F	UL 746B
UL RTI, Mechanical with Impact	125 °C	257 °F	UL 746B
UL RTI, Mechanical without Impact	125 °C	257 °F	UL 746B
Flammability, UL94	V-2 @Thickness 1.47 mm	V-2 @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

Optical Properties	Metric	English	Comments
Electrical Properties	**Metric**	**English**	**Comments**
Volume Resistivity	>= 2.60e+17 ohm-cm	>= 2.60e+17 ohm-cm	ASTM D257
Dielectric Constant	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	ASTM D150
	3.15 @Frequency 50.0 - 60.0 Hz	3.15 @Frequency 50.0 - 60.0 Hz	ASTM D150
Dielectric Strength	20.3 kV/mm @Thickness 3.20 mm	516 kV/in @Thickness 0.126 in	in air; ASTM D149
Dissipation Factor	0.0012 @Frequency 50.0 - 60.0 Hz	0.0012 @Frequency 50.0 - 60.0 Hz	ASTM D150
	0.024 @Frequency 100 Hz	0.024 @Frequency 100 Hz	ASTM D150
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	0.00 - 15 arcs	0.00 - 15 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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