

SABIC Innovative Plastics Lexan® HPH4504 PPC

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Gamma Radiation Resistant , Polyphthalate Carbonate

Material Notes:

High heat specialty polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 of USP Class VI). EtO, steam, gamma and e-beam sterilizable. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPH4504-PPC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D 792
Density	1.19 g/cc	0.0430 lb/in ³	ASTM D 792
	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Water Absorption	0.16 % @Time 86400 sec	0.16 % @Time 24.0 hour	ASTM D 570
Moisture Absorption at Equilibrium	0.35 %	0.35 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.16 % @Temperature 23.0 °C	0.16 % @Temperature 73.4 °F	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 D 1238
	3.0 g/10 min @Load 1.20 kg, Temperature 300 °C	3.0 g/10 min @Load 2.65 lb, Temperature 572 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85	85	ASTM D 785
Hardness, Rockwell R	122	122	ASTM D 785
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 D 638
Tensile Strength, Yield	65.0 MPa	9430 psi	Type I, 50 mm/min; ASTM D 638

Mechanical Properties	65.0 MPa Metric	9430 psi English	50 mm/min; ISO 527 Comments
Elongation at Break	7.0 %	7.0 %	50 mm/min; ISO 527
	122 %	122 %	Type I, 50 mm/min; ASTM D 638
Elongation at Yield	7.0 %	7.0 %	Type I, 50 mm/min; ASTM D 638
	7.0 %	7.0 %	50 mm/min; ISO 527
Tensile Modulus	2.09 GPa	303 ksi	5 mm/min; ASTM D 638
	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 D 790
Flexural Modulus	2.02 GPa	293 ksi	1.3 mm/min, 50 mm span; ASTM D 790
	2.12 GPa	307 ksi	2 mm/min; ISO 178
Izod Impact, Notched	1.44 J/cm @Temperature -30.0 °C	2.70 ft-lb/in @Temperature -22.0 °F	ASTM D 256
	6.40 J/cm @Temperature 23.0 °C	12.0 ft-lb/in @Temperature 73.4 °F	ASTM D 256
Izod Impact, Unnotched	32.04 J/cm @Temperature 23.0 °C	60.02 ft-lb/in @Temperature 73.4 °F	ASTM D 4812
Izod Impact, Notched (ISO)	11.0 kJ/m² @Temperature -30.0 °C	5.23 ft-lb/in² @Temperature -22.0 °F	80*10*4; ISO 180/1A
	13.0 kJ/m² @Temperature 23.0 °C	6.19 ft-lb/in² @Temperature 73.4 °F	80*10*4; ISO 180/1A
Charpy Impact, Notched	1.50 J/cm² @Temperature 23.0 °C	7.14 ft-lb/in² @Temperature 73.4 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
Tensile Impact Strength	577 kJ/m²	275 ft-lb/in²	Type S; ASTM D 1822
Dart Drop, Total Energy	149 J @Temperature 23.0 °C	110 ft-lb @Temperature 73.4 °F	ASTM D 3029
Impact Test	73.0 J @Temperature 23.0 °C	53.8 ft-lb @Temperature 73.4 °F	Instrumented Impact Total Energy; ASTM D 3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	60.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	33.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	91.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	51.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^\circ\text{C}$	@Temperature -40.0 - 203 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	60.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	33.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	60.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	33.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
Specific Heat Capacity	1.25 J/g- $^\circ\text{C}$	0.299 BTU/lb- $^\circ\text{F}$	ASTM C 351
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft ² - $^\circ\text{F}$	ASTM C 177
Deflection Temperature at 1.8 MPa (264 psi)	132 $^\circ\text{C}$	270 $^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	143 $^\circ\text{C}$	289 $^\circ\text{F}$	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D 648
Vicat Softening Point	154 $^\circ\text{C}$	309 $^\circ\text{F}$	Rate B/50; ISO 306
	155 $^\circ\text{C}$	311 $^\circ\text{F}$	Rate B/120; ISO 306
	160 $^\circ\text{C}$	320 $^\circ\text{F}$	Rate B/50; ASTM D 1525
UL RTI, Electrical	125 $^\circ\text{C}$	257 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	125 $^\circ\text{C}$	257 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	125 $^\circ\text{C}$	257 $^\circ\text{F}$	UL 746B

Optical Properties	Metric	English	Comments
Refractive Index	1.60	1.60	ASTM D 542
Haze	1.0 %	1.0 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	85 %	85 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 2.60 \times 10^{17}$ ohm-cm	$\geq 2.60 \times 10^{17}$ ohm-cm	ASTM D 257
Dielectric Constant	3.0	3.0	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.15	3.15	ASTM D 150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	20.2 kV/mm	513 kV/in	in air; ASTM D 149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0012	0.0012	ASTM D 150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.024	0.024	ASTM D 150
	@Frequency 100 Hz	@Frequency 100 Hz	
Comparative Tracking Index	175 - 250 V	175 - 250 V	PLC code 3; UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	PLC code 2; UL 746A
High Amp Arc Ignition, HAI	0.00 - 15 arcs	0.00 - 15 arcs	surface, PLC code 4; UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	PLC code 3; UL 746A

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