

SABIC Innovative Plastics Lexan® HPB3144G PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Standard flow, transparent, high purity polycarbonate copolymer resin with reduced oxygen permeability and water vapor transmission rate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. 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-HPB3144G-PC-Copolymer.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D 792
Density	1.17 g/cc	0.0423 lb/in ³	ASTM D 792
	1.17 g/cc	0.0423 lb/in ³	ISO 1183
Water Absorption	0.080 %	0.080 %	ASTM D 570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption at Equilibrium	0.13 %	0.13 %	23°C / 50% RH; ISO 62
	0.13 %	0.13 %	50% RH; ASTM D 570
	0.28 %	0.28 %	ASTM D 570
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.040 %	0.040 %	50% RH; ASTM D 570
	@Time 86400 sec	@Time 24.0 hour	
	0.27 %	0.27 %	ISO 62
Water Absorption at Saturation	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.0050 - 0.0080 cm/cm	0.0050 - 0.0080 in/in	SABIC Method
Linear Mold Shrinkage, Flow	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	13 g/10 min	13 g/10 min	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	
	14.5 g/10 min	14.5 g/10 min	ASTM D 1238
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
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Hardness, Rockwell L Mechanical Properties	108 Metric	108 English	ASTM D 785 Comments
Hardness, Rockwell M	93	93	ASTM D 785
Hardness, H358/30	128 MPa	18600 psi	ISO 2039-1
Tensile Strength at Break	60.0 MPa	8700 psi	50 mm/min; ISO 527
	65.0 MPa	9430 psi	Type I, 50 mm/min; ASTM D 638
Tensile Strength, Yield	80.0 MPa	11600 psi	Type I, 50 mm/min; ASTM D 638
	80.0 MPa	11600 psi	50 mm/min; ISO 527
Elongation at Break	40 %	40 %	50 mm/min; ISO 527
	70 %	70 %	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	2.45 GPa	355 ksi	1 mm/min; ISO 527
	2.90 GPa	421 ksi	50 mm/min; ASTM D 638
Flexural Yield Strength	108 MPa	15700 psi	2 mm/min; ISO 178
	120 MPa	17400 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.45 GPa	355 ksi	2 mm/min; ISO 178
	2.60 GPa	377 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	0.300 J/cm	0.562 ft-lb/in	ASTM D 256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.300 J/cm	0.562 ft-lb/in	ASTM D 256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	NB	NB	ASTM D 4812
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	3.00 kJ/m ²	1.43 ft-lb/in ²	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	4.00 kJ/m ²	1.90 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	5.00 kJ/m ²	2.38 ft-lb/in ²	80*10*3; ISO 180/1A

Mechanical Properties	@Temperature 23.0 °C Metric	@Temperature 73.4 °F English	Comments
Izod Impact, Unnotched (ISO)	45.8 kJ/m ²	21.4 ft-lb/in ²	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	47.0 kJ/m ²	22.4 ft-lb/in ²	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
NB	NB	NB	80*10*4; ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
NB	NB	NB	80*10*3; ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	4.70 J/cm ²	22.4 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	4.70 J/cm ²	22.4 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
NB	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
NB	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.300 J/cm ²	1.43 ft-lb/in ²	V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.300 J/cm ²	1.43 ft-lb/in ²	V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
0.300 J/cm ²	0.300 J/cm ²	1.43 ft-lb/in ²	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Impact Test	30.0 J	22.1 ft-lb	Instrumented Impact Total Energy; ASTM D 3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Taber Abrasion, mg/1000 Cycles	10	10	CS-17; ASTM D 1044
	@Load 1.00 kg	@Load 2.20 lb	
10	10	10	CS-17; SABIC Method
	@Load 1.00 kg	@Load 2.20 lb	

Thermal Properties	Metric	English	Comments
	70.0 µm/m-°C	38.9 µin/in-°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	@Temperature -40.0 - 95.0 °C	@Temperature -40.0 - 203 °F	ASTM E 831
	70.0 µm/m-°C	38.9 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	ISO 11359-2
CTE, linear, Transverse to Flow	@Temperature -40.0 - 95.0 °C	@Temperature -40.0 - 203 °F	ASTM E 831
	70.0 µm/m-°C	38.9 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	ISO 11359-2
Specific Heat Capacity	1.40 J/g-°C	0.335 BTU/lb-°F	ASTM C 351
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	ASTM C 177
	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	ISO 8302
Hot Ball Pressure Test	<= 140 °C	<= 284 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	131 °C	268 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	133 °C	271 °F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	133 °C	271 °F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	118 °C	244 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	119 °C	246 °F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	119 °C	246 °F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	138 °C	280 °F	Rate B/50; ISO 306
	139 °C	282 °F	Rate B/50; ASTM D 1525
	140 °C	284 °F	Rate B/120; ISO 306

Optical Properties	Metric	English	Comments
Refractive Index	1.584	1.584	ASTM D 542

Optical Properties	1 584 Metric	1 584 English	ISO 489 Comments
Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00 \times 10^{17}$ ohm-cm	$\geq 1.00 \times 10^{17}$ ohm-cm	ASTM D 257
Dielectric Constant	2.8	2.8	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	2.9	2.9	ASTM D 150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Comparative Tracking Index	250 - 400 V	250 - 400 V	PLC code 2; UL 746A

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