

SABIC Innovative Plastics Lexan® HPS4 PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Medium flow polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO, steam, e-beam, and gamma sterilizable. Contains mold release.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPS4-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in ³	ISO 1183
Water Absorption	0.14 % @Time 86400 sec	0.14 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.100 %	0.100 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.26 %	0.26 %	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	10.5 g/10 min @Load 1.20 kg, Temperature 300 °C	10.5 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	73.0 MPa	10600 psi	50 mm/min; ISO 527
	74.0 MPa	10700 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	61.0 MPa	8850 psi	50 mm/min; ISO 527
	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	128 %	128 %	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
			Type I, 50 mm/min; ASTM D638
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
	6.5 %	6.5 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.30 GPa	334 ksi	50 mm/min; ASTM D638
	2.39 GPa	347 ksi	1 mm/min; ISO 527
Flexural Yield Strength	93.0 MPa	13500 psi	2 mm/min; ISO 178
	100 MPa	14500 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.25 GPa	326 ksi	2 mm/min; ISO 178
	2.40 GPa	348 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	8.40 J/cm	15.7 ft-lb/in	ASTM D256
	2.20 J/cm	4.12 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	70.0 kJ/m ²	33.3 ft-lb/in ²	80*10*3; ISO 180/1A
	10.0 kJ/m ²	4.76 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB	NB	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	7.00 J/cm ²	33.3 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	8.20 J/cm ²	39.0 ft-lb/in ²	ISO 179/2C
	1.50 J/cm ²	7.14 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	88.0 J	64.9 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	78.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	43.3 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
	78.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	43.3 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	76.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	42.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
	76.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	42.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	138 $^{\circ}\text{C}$	280 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	127 $^{\circ}\text{C}$	261 $^{\circ}\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	126 $^{\circ}\text{C}$	259 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	132 $^{\circ}\text{C}$	270 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	143 $^{\circ}\text{C}$	289 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
	143 $^{\circ}\text{C}$	289 $^{\circ}\text{F}$	Rate B/50; ISO 306
	145 $^{\circ}\text{C}$	293 $^{\circ}\text{F}$	Rate B/120; ISO 306

Descriptive Properties	Value	Comments
Ball Pressure Test, 125 $^{\circ}\text{C}$ +/- 2 $^{\circ}\text{C}$	PASSES	IEC 60695-10-2

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