

SABIC Innovative Plastics Lexan® HPS7R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Low 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. Higher level of mold release than HPS7.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPS7R-PC.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/in ³	ISO 1183
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 @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	5.0 g/10 min @Load 1.20 kg, Temperature 300 °C	5.0 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
	24 g/10 min @Load 5.00 kg, Temperature 300 °C	24 g/10 min @Load 11.0 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	5.0 g/10 min @Load 1.20 kg, Temperature 300 °C	5.0 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	71.0 MPa	10300 psi	50 mm/min; ISO 527
	72.0 MPa	10400 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	125 %	125 %	Type I, 50 mm/min; ASTM D638
	126 %	126 %	50 mm/min; ISO 527
Elongation at Yield	5.9 %	5.9 %	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Type I, 50 mm/min; ASTM D638 Comments
Tensile Modulus	2.27 GPa	329 ksi	50 mm/min; ASTM D638
	2.45 GPa	355 ksi	1 mm/min; ISO 527
Flexural Yield Strength	95.0 MPa	13800 psi	2 mm/min; ISO 178
	100 MPa	14500 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.20 GPa	319 ksi	2 mm/min; ISO 178
	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	9.35 J/cm	17.5 ft-lb/in	ASTM D256
	7.85 J/cm	14.7 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	27.0 J/cm	50.6 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	75.0 kJ/m ²	35.7 ft-lb/in ²	80*10*3; ISO 180/1A
	15.0 kJ/m ²	7.14 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	7.50 J/cm ²	35.7 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	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	82.0 J	60.5 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	66.0 µm/m-°C	36.7 µin/in-°F	
	@Temperature -40.0 -	@Temperature -40.0 -	ASTM E 831

Thermal Properties	40.0 °C Metric	104 °F English	Comments
	66.0 µm/m-°C	36.7 µin/in-°F	
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	ISO 11359-2
CTE, linear, Transverse to Flow	75.0 µm/m-°C	41.7 µin/in-°F	
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	ASTM E 831
	75.0 µm/m-°C	41.7 µin/in-°F	
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	141 °C	286 °F	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	128 °C	262 °F	
			Flatw 80*10*4 sp=64mm; ISO 75/Af
	129 °C	264 °F	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	145 °C	293 °F	
			Rate B/50; ASTM D1525
	145 °C	293 °F	
			Rate B/50; ISO 306
	146 °C	295 °F	
			Rate B/120; ISO 306

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