

## SABIC Innovative Plastics Lexan® HPF1 PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

**Material Notes:**

25 MFR LEXAN High Flow Ductile Copolymer Healthcare Grade

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Lexan-HPF1-PC-Copolymer.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPF1-PC-Copolymer.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.20 g/cc	0.0434 lb/in <sup>3</sup>	ASTM D792
	1.20 g/cc	0.0434 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.30 %	0.30 %	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	25 g/10 min @Load 1.20 kg, Temperature 300 °C	25 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	23 g/10 min @Load 1.20 kg, Temperature 300 °C	23 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm <sup>3</sup> /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
Tensile Strength at Break	60.0 MPa	8700 psi	Type I, 50 mm/min; ASTM D638
	65.0 MPa	9430 psi	50 mm/min; ISO 527
Tensile Strength, Yield	59.0 MPa	8560 psi	Type I, 50 mm/min; ASTM D638
	62.0 MPa	8990 psi	50 mm/min; ISO 527
Elongation at Break	123 %	123 %	50 mm/min; ISO 527
	132 %	132 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D638
	6.0 %	6.0 %	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
	2.23 GPa	323 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
	99.0 MPa	14400 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.18 GPa	316 ksi	2 mm/min; ISO 178
	2.22 GPa	322 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	8.12 J/cm	15.2 ft-lb/in	ASTM D256
	1.25 J/cm	2.34 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	7.89 J/cm	14.8 ft-lb/in	ASTM D256
	@Temperature 0.000 °C	@Temperature 32.0 °F	
Izod Impact, Notched (ISO)	64.0 kJ/m <sup>2</sup>	30.5 ft-lb/in <sup>2</sup>	80*10*3; ISO 180/1A
	13.0 kJ/m <sup>2</sup>	6.19 ft-lb/in <sup>2</sup>	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	7.30 J/cm <sup>2</sup>	34.7 ft-lb/in <sup>2</sup>	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.30 J/cm <sup>2</sup>	6.19 ft-lb/in <sup>2</sup>	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	67.0 J	49.4 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Impact Test	110 J	81.1 ft-lb	Multiaxial Impact; ISO 6603

Thermal Properties	Metric	English	Comments
	80.0 µm/m-°C	44.4 µin/in-°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	40.0 °C @Temperature -40.0 - 40.0 °C	104 °F @Temperature -40.0 - 104 °F	ASTM E 831
CTE, linear, Transverse to Flow	80.0 µm/m-°C @Temperature -40.0 - 40.0 °C	44.4 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
CTE, linear, Transverse to Flow	80.0 µm/m-°C @Temperature -40.0 - 40.0 °C	44.4 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
CTE, linear, Transverse to Flow	80.0 µm/m-°C @Temperature -40.0 - 40.0 °C	44.4 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	122 °C @Thickness 3.20 mm	252 °F @Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	115 °C	239 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	111 °C @Thickness 3.20 mm	232 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	129 °C	264 °F	Rate B/50; ISO 306
	130 °C	266 °F	Rate B/120; ISO 306
	135 °C	275 °F	Rate B/50; ASTM D1525
Flammability, UL94	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	UL 94

Optical Properties	Metric	English	Comments
Refractive Index	1.582	1.582	ASTM D542
Haze	<= 1.0 % @Thickness 2.54 mm	<= 1.0 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	80 %	80 %	2.54 mm; ASTM D1003

Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	PASS	IEC 60695-10-2

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