

SABIC Innovative Plastics Lexan® HFD1810 PC Copolymer (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

40 MFR LEXAN High Flow Ductile Copolymer

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HFD1810-PC-Copolymer-Europe-Africa-Middle-East.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 ³	ASTM D792
	1.20 g/cc	0.0434 lb/in ³	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	40 g/10 min @Load 1.20 kg, Temperature 300 °C	40 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	7.0 g/10 min @Load 1.20 kg, Temperature 250 °C	7.0 g/10 min @Load 2.65 lb, Temperature 482 °F	MVR [cm ³ /10 min]; ISO 1133
	38 g/10 min @Load 1.20 kg, Temperature 300 °C	38 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
Tensile Strength at Break	56.0 MPa	8120 psi	50 mm/min; ISO 527
	56.0 MPa	8120 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	60.0 MPa	8700 psi	Type I, 50 mm/min; ASTM D638
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	97 %	97 %	50 mm/min; ISO 527

Mechanical Properties	130 % Metric	130 % English	Type I, 50 mm/min; ASTM D638 Comments
Elongation at Yield	5.5 %	5.5 %	Type I, 50 mm/min; ASTM D638
	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.18 GPa	316 ksi	1 mm/min; ISO 527
	2.27 GPa	329 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	91.0 MPa	13200 psi	2 mm/min; ISO 178
	100 MPa	14500 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.18 GPa	316 ksi	2 mm/min; ISO 178
	2.24 GPa	325 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	7.28 J/cm	13.6 ft-lb/in	ASTM D256
	1.10 J/cm	2.06 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	6.99 J/cm	13.1 ft-lb/in	ASTM D256
	@Temperature 0.000 °C	@Temperature 32.0 °F	
Izod Impact, Notched (ISO)	58.0 kJ/m ²	27.6 ft-lb/in ²	80*10*3; ISO 180/1A
	11.0 kJ/m ²	5.23 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	6.40 J/cm ²	30.5 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.30 J/cm ²	6.19 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	56.0 J	41.3 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Impact Test Mechanical Properties	95.0 J Metric	70.1 ft-lb English	Multiaxial Impact; ISO 6603 Comments
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Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	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)	121 $^\circ\text{C}$	250 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	115 $^\circ\text{C}$	239 $^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	110 $^\circ\text{C}$	230 $^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	129 $^\circ\text{C}$	264 $^\circ\text{F}$	Rate B/50; ISO 306
	130 $^\circ\text{C}$	266 $^\circ\text{F}$	Rate B/120; ISO 306
	135 $^\circ\text{C}$	275 $^\circ\text{F}$	Rate B/50; ASTM D1525

Optical Properties	Metric	English	Comments
Refractive Index	1.582	1.582	ASTM D542
Haze	$\leq 1.0 \%$	$\leq 1.0 \%$	ASTM D1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	88 %	88 %	2.54 mm; ASTM D1003

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

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