

SABIC Innovative Plastics Lexan® EXL1112T PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® EXL1112T polycarbonate (PC) siloxane copolymer resin is a transparent injection molding (IM) grade. This resin offers good low temperature (-20 C) ductility in combination with high flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC resins. Lexan EXL1112T resin is a general purpose product available in transparent and opaque

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http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-EXL1112T-PC-Copolymer.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
Moisture Absorption	0.0900 %	0.0900 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.12 %	0.12 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm @Thickness 3.20 mm	0.0040 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0080 cm/cm @Thickness 3.20 mm	0.0040 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	20 g/10 min @Load 1.20 kg, Temperature 300 °C	20 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	19 g/10 min @Load 1.20 kg, Temperature 300 °C	19 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	89	89	ISO 2039-2
Tensile Strength at Break	56.0 MPa	8120 psi	50 mm/min; ISO 527
	57.0 MPa	8270 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	57.0 MPa	8270 psi	50 mm/min; ISO 527
	58.0 MPa	8410 psi	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	119.4 %	119.4 %	50 mm/min; ISO 527
Elongation at Yield	5.4 %	5.4 %	50 mm/min; ISO 527
	5.7 %	5.7 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.26 GPa	328 ksi	50 mm/min; ASTM D638
	2.34 GPa	339 ksi	1 mm/min; ISO 527
Flexural Yield Strength	89.0 MPa	12900 psi	2 mm/min; ISO 178
	94.0 MPa	13600 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.14 GPa	310 ksi	2 mm/min; ISO 178
	2.24 GPa	325 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	7.36 J/cm	13.8 ft-lb/in	ASTM D256
	6.18 J/cm	11.6 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	65.0 kJ/m ²	30.9 ft-lb/in ²	80*10*3; ISO 180/1A
	55.0 kJ/m ²	26.2 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	6.50 J/cm ²	30.9 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	4.50 J/cm ²	21.4 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	74.0 J	54.6 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	74.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	41.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^\circ\text{C}$	@Temperature -40.0 - 203 $^\circ\text{F}$	
	74.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	41.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^\circ\text{C}$	@Temperature 73.4 - 176 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	76.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	42.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^\circ\text{C}$	@Temperature -40.0 - 203 $^\circ\text{F}$	
	76.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	42.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^\circ\text{C}$	@Temperature 73.4 - 176 $^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	116 $^\circ\text{C}$	241 $^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	121 $^\circ\text{C}$	250 $^\circ\text{F}$	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	138 $^\circ\text{C}$	280 $^\circ\text{F}$	Rate A/50; ASTM D1525
	138 $^\circ\text{C}$	280 $^\circ\text{F}$	Rate B/50; ISO 306
	139 $^\circ\text{C}$	282 $^\circ\text{F}$	Rate B/120; ISO 306
UL RTI, Electrical	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
Flammability, UL94	HB	HB	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Glow Wire Test	850 $^\circ\text{C}$	1560 $^\circ\text{F}$	IEC 60695-2-13
	850 $^\circ\text{C}$	1560 $^\circ\text{F}$	IEC 60695-2-13
	960 $^\circ\text{C}$	1760 $^\circ\text{F}$	IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	
Optical Properties	Metric	English	Comments
Haze	3.0 %	3.0 %	ASTM D1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	82 %	82 %	2.54 mm; ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00 \times 10^{15}$ ohm-cm	$\geq 1.00 \times 10^{15}$ ohm-cm	ASTM D257
Surface Resistance	$\geq 1.00 \times 10^{15}$ ohm	$\geq 1.00 \times 10^{15}$ ohm	ASTM D257

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

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