SABIC Innovative Plastics Lexan® EXL1444 PC Copolymer (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan* EXL1444 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade suitable for FDA compliant applications. This resin offers extreme low temperature (-40°C) ductility, exhibits excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. Lexan EXL1444 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of food contact applications.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-EXL1444-PC-Copolymer-Asia-Pacific.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.18 g/cc	1.18 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in³	ISO 1183
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.35 %	0.35 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	on Tensile Bar; SABIC Method
	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	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	9.0 g/10 min @Load 1.20 kg, Temperature 300 °C	9.0 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	ASTM D785
Hardness, Rockwell R	121	121	ASTM D785
Tensile Strength at Break	50.0 MPa	7250 psi	Type I, 50 mm/min; ASTM D638
	60.0 MPa	8700 psi	50 mm/min; ISO 527
Tensile Strength, Yield	55.0 MPa	7980 psi	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	57.0 MPa	8270 psi	50 mm/min; ISO 527
Elongation at Break	98 %	98 %	Type I, 50 mm/min; ASTM D638
	120 %	120 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D638
	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.02 GPa	293 ksi	50 mm/min; ASTM D638
	2.15 GPa	312 ksi	1 mm/min; ISO 527
Flexural Yield Strength	85.0 MPa	12300 psi	2 mm/min; ISO 178
	92.0 MPa	13300 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.23 GPa	323 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.25 GPa	326 ksi	2 mm/min; ISO 178
Izod Impact, Notched	8.65 J/cm	16.2 ft-lb/in	ASTM D256
	7.75 J/cm @Temperature -30.0 °C	14.5 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Notched (ISO)	70.0 kJ/m²	33.3 ft-lb/in²	80*10*3; ISO 180/1A
	60.0 kJ/m² @Temperature -30.0 °C	28.6 ft-lb/in² @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*3; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	7.00 J/cm²	33.3 ft-lb/in²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	6.50 J/cm² @Temperature -30.0 °C	30.9 ft-lb/in² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	70.0 J @Temperature 23.0 °C	51.6 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	69.7 µm/m-°C @Temperature -40.0 - 40.0 °C	38.7 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	72.0 µm/m-°C @Temperature 23.0 - 80.0 °C	40.0 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
CTE, linear, Transverse to Flow	72.0 µm/m-°C @Temperature 23.0 - 80.0 °C	40.0 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
	74.7 µm/m-°C @Temperature -40.0 - 40.0 °C	41.5 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
Deflection Temperature at 0.46 MPa (66 psi)	140 °C	284 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	140 °C @Thickness 3.20 mm	284 °F @Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	128 °C	262 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	124 °C @Thickness 3.20 mm	255 °F @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
UL RTI, Electrical	50.0 °C	122 °F	UL 746B
UL RTI, Mechanical with Impact	50.0 °C	122 °F	UL 746B
UL RTI, Mechanical without Impact	50.0 °C	122 °F	UL 746B
Oxygen Index	37 %	37 %	ISO 4589
Glow Wire Test	850 °C	1560 °F	IEC 60695-2-13
	960 °C @Thickness 1.00 mm	1760 °F @Thickness 0.0394 in	IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257

Electrical Properties	Metric	English	Comments
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ASTM D257
Dielectric Constant	2.64 @Frequency 1.00e+6 Hz	2.64 @Frequency 1.00e+6 Hz	ASTM D150
	2.68 @Frequency 100 Hz	2.68 @Frequency 100 Hz	ASTM D150
Dielectric Strength	16.3 kV/mm @Thickness 0.800 mm	414 kV/in @Thickness 0.0315 in	in oil; ASTM D149
Dissipation Factor	0.0012 @Frequency 100 Hz	0.0012 @Frequency 100 Hz	ASTM D150
	0.0093 @Frequency 1.00e+6 Hz	0.0093 @Frequency 1.00e+6 Hz	ASTM D150

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

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