

SABIC Innovative Plastics Lexan® 500ECR PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® 500ECR Polycarbonate (PC) resin is a 10% glass fiber filled, injection moldable grade. It is of non-chlorinated & non-brominated flame retardant systems with UL-94 V0 rating at 2.3mm. It is available in various opaque color options designed for applications requiring improved stiffness.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-500ECR-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.27 g/cc	1.27 g/cc	ASTM D792
Density	1.25 g/cc	0.0452 lb/in ³	ISO 1183
Moisture Absorption	0.130 %	0.130 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.31 %	0.31 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0060 cm/cm @Thickness 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0060 cm/cm @Thickness 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	7.5 g/10 min @Load 1.20 kg, Temperature 300 °C	7.5 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 300 °C	7.0 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	115 MPa	16700 psi	ISO 2039-1
Tensile Strength at Break	45.0 MPa	6530 psi	5 mm/min; ISO 527
	48.0 MPa	6960 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	57.0 MPa	8270 psi	Type I, 5 mm/min; ASTM D638
	60.0 MPa	8700 psi	5 mm/min; ISO 527
Elongation at Break	7.0 %	7.0 %	5 mm/min; ISO 527
	46 %	46 %	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	5.0 %	5.0 %	5 mm/min; ISO 527
Tensile Modulus	2.46 GPa	357 ksi	5 mm/min; ASTM D638
	3.30 GPa	479 ksi	1 mm/min; ISO 527
Flexural Strength	94.0 MPa	13600 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Yield Strength	95.0 MPa	13800 psi	2 mm/min; ISO 178
Flexural Modulus	3.12 GPa	453 ksi	1.3 mm/min, 50 mm span; ASTM D790
	3.40 GPa	493 ksi	2 mm/min; ISO 178
Izod Impact, Notched	1.34 J/cm	2.51 ft-lb/in	ASTM D256
	1.00 J/cm	1.87 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	NB	NB	ASTM D4812
	@Thickness 6.40 mm	@Thickness 0.252 in	
Izod Impact, Notched (ISO)	10.0 kJ/m ²	4.76 ft-lb/in ²	80*10*3; ISO 180/1A
	8.00 kJ/m ²	3.81 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*4; ISO 180/1U
	130 kJ/m ²	61.9 ft-lb/in ²	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	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	
	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	

Mechanical Properties	Metric	English	Comments
Charpy Impact, Notched	0.900 J/cm ²	7.00 ft-lb/in ²	10-4 sp=62mm; ISO 179/1eA
	1.00 J/cm ²	4.76 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.50 J/cm ²	7.14 ft-lb/in ²	ISO 179/2C
	0.900 J/cm ²	4.28 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	61.0 J	45.0 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Taber Abrasion, mg/1000 Cycles	11	11	CS-17, 1 kg; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	40.0 µm/m-°C	22.2 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
	46.8 µm/m-°C	26.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
CTE, linear, Transverse to Flow	84.6 µm/m-°C	47.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
	84.6 µm/m-°C	47.0 µin/in-°F	ISO 11359-2
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft ² -°F	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	144 °C	291 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
	143 °C	289 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	136 °C	277 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	136 °C	277 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	142 °C	288 °F	Annealed 120°C, 2hrs; ISO 75/Ae
	136 °C	277 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	

Vicat Softening Point Thermal Properties	141 °C Metric	286 °F English	Rate B/50; ISO 306 Comments
	143 °C	289 °F	Rate B/120; ISO 306
	154 °C	309 °F	Rate B/50; ASTM D1525
UL RTI, Electrical	130 °C	266 °F	UL 746B
UL RTI, Mechanical with Impact	130 °C	266 °F	UL 746B

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	2.8	2.8	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	2.9	2.9	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	16.0 kV/mm	406 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	25.0 kV/mm	635 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	33.0 kV/mm	838 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	150 V	150 V	IEC 60112
	175 - 250 V	175 - 250 V	UL 746A
Hot Wire Ignition, HWI	7.0 - 15 sec	7.0 - 15 sec	UL 746A
High Amp Arc Ignition, HAI	0.00 - 15 arcs	0.00 - 15 arcs	UL 746A

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