

SABIC Innovative Plastics Lexan® 121R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

UL rated HB as of 10/97. 200 series recommended when V-2 rating required. Nonhalogenated. 17.5 MFR, for small, intricate parts. Internal mold release.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-121R-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in ³	ASTM D792
Water Absorption	0.15 % @Time 86400 sec	0.15 % @Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	0.35 %	0.35 %	ASTM D570
	0.58 % @Temperature 100 °C	0.58 % @Temperature 212 °F	ASTM D570
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	17.5 g/10 min @Load 1.20 kg, Temperature 300 °C	17.5 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	70	70	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength at Break	68.0 MPa	9860 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	125 %	125 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	Type I, 50 mm/min; ASTM D638
Flexural Yield Strength	96.0 MPa	13900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790

Izod Impact Notched Mechanical Properties	6.94 J/cm Metric	13.0 ft-lb/in English	ASTM D256 Comments
Izod Impact, Unnotched	32.04 J/cm	60.02 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	65.0 kJ/m ²	30.9 ft-lb/in ²	80*10*3; ISO 180/1A
	11.0 kJ/m ² @Temperature -30.0 °C	5.23 ft-lb/in ² @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	6.50 J/cm ²	30.9 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.20 J/cm ² @Temperature -30.0 °C	5.71 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Tensile Impact Strength	546 kJ/m ²	260 ft-lb/in ²	Type S; ASTM D1822
Dart Drop, Total Energy	62.0 J	45.7 ft-lb	Instrumented Impact Energy @ peak; ASTM D3763
	169 J	125 ft-lb	ASTM D3029
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.4 µm/m-°C @Temperature -40.0 - 95.0 °C	38.0 µin/in-°F @Temperature -40.0 - 203 °F	ASTM E 831
Specific Heat Capacity	1.25 J/g-°C	0.299 BTU/lb-°F	ASTM C351
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft ² -°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	137 °C @Thickness 6.40 mm	279 °F @Thickness 0.252 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	129 °C @Thickness 6.40 mm	264 °F @Thickness 0.252 in	unannealed; ASTM D648
Vicat Softening Point	154 °C	309 °F	Rate B/50; ASTM D1525

Thermal Properties	Metric	English	Comments
UL RTI, Mechanical with Impact	130 °C	266 °F	UL 746B
UL RTI, Mechanical without Impact	130 °C	266 °F	UL 746B
Flammability, UL94	HB @Thickness 0.710 mm	HB @Thickness 0.0280 in	UL 94

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542
Haze	1.0 % @Thickness 2.54 mm	1.0 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	88 %	88 %	2.54 mm; ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+17 ohm-cm	>= 1.00e+17 ohm-cm	ASTM D257
Dielectric Constant	2.96 @Frequency 1.00e+6 Hz	2.96 @Frequency 1.00e+6 Hz	ASTM D150
	3.17 @Frequency 50.0 - 60.0 Hz	3.17 @Frequency 50.0 - 60.0 Hz	ASTM D150
Dielectric Strength	14.9 kV/mm @Thickness 3.20 mm	378 kV/in @Thickness 0.126 in	in air; ASTM D149
Dissipation Factor	0.00090 @Frequency 50.0 - 60.0 Hz	0.00090 @Frequency 50.0 - 60.0 Hz	ASTM D150
	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	ASTM D150
Comparative Tracking Index	250 - 400 V	250 - 400 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	60 - 120 arcs	60 - 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	25.4 - 80.0 mm/min	1.00 - 3.15 in/min	UL 746A

Descriptive Properties	Value	Comments
Radiant Panel Listing	YES	UL Tested
Specific Volume	0.83cm ³ /g	ASTM D792
UV-light, water exposure/immersion	F2	UL 746C

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