

SABIC Innovative Plastics Lexan® 244R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

10.5 MFR. Improved flame retardance. USA FDA compliant (limited colors). Internal mold release.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-244R-PC.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Water Absorption	0.15 %	0.15 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Moisture Absorption at Equilibrium	0.35 %	0.35 %	ASTM D570
	0.58 %	0.58 %	ASTM D570
	@Temperature 100 °C	@Temperature 212 °F	
Water Absorption at Saturation	0.35 %	0.35 %	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	10.5 g/10 min	10.5 g/10 min	ASTM D1238
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	
Melt Index of Compound	12 g/10 min	12 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	70	70	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Hardness, H358/30	95.0 MPa	13800 psi	ISO 2039-1
Tensile Strength at Break	69.0 MPa	10000 psi	Type I, 50 mm/min; ASTM D638
	70.0 MPa	10200 psi	50 mm/min; ISO 527

Tensile Strength, Yield Mechanical Properties	62.0 MPa Metric	8990 psi English	Type I, 50 mm/min; ASTM D638 Comments
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	110 %	110 %	50 mm/min; ISO 527
	130 %	130 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
	7.0 %	7.0 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.35 GPa	341 ksi	1 mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
	97.0 MPa	14100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.30 GPa	334 ksi	2 mm/min; ISO 178
	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	8.01 J/cm	15.0 ft-lb/in	ASTM D256
Izod Impact, Unnotched	32.04 J/cm	60.02 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	25.0 kJ/m ²	11.9 ft-lb/in ²	80*10*4; ISO 180/1A
	10.0 kJ/m ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	2.50 J/cm ²	11.9 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	1.00 J/cm ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Tensile Impact Strength	578 kJ/m ²	275 ft-lb/in ²	Type S; ASTM D1822
Dart Drop, Total Energy	169 J	125 ft-lb	ASTM D3029
	10	10	

Taber Abrasion, mg/1000 Cycles		CS-17, 1 kg; ASTM D1044	
Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.4 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^{\circ}\text{C}$	@Temperature -40.0 - 203 $^{\circ}\text{F}$	
	70.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
Specific Heat Capacity	1.26 J/g- $^{\circ}\text{C}$	0.301 BTU/lb- $^{\circ}\text{F}$	ASTM C351
Thermal Conductivity	0.270 W/m-K	1.87 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	136 $^{\circ}\text{C}$	277 $^{\circ}\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	138 $^{\circ}\text{C}$	280 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	125 $^{\circ}\text{C}$	257 $^{\circ}\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	127 $^{\circ}\text{C}$	261 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	141 $^{\circ}\text{C}$	286 $^{\circ}\text{F}$	Rate B/50; ISO 306
	142 $^{\circ}\text{C}$	288 $^{\circ}\text{F}$	Rate B/120; ISO 306
	153 $^{\circ}\text{C}$	307 $^{\circ}\text{F}$	Rate A/50; ISO 306
	154 $^{\circ}\text{C}$	309 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
UL RTI, Electrical	130 $^{\circ}\text{C}$	266 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical with Impact	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	V-2	V-2	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	UL 94
	@Thickness 6.00 mm	@Thickness 0.236 in	
Oxygen Index	25 %	25 %	ASTM D2863

Thermal Properties	Metric	English	Comments
Glow Wire Test	850 °C	1500 °F	IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542
Haze	1.0 %	1.0 %	ASTM D1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
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	2.96	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.17	3.17	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	15.0 kV/mm	381 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.00090	0.00090	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.010	0.010	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
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
Ball Pressure Test, 75°C +/- 2°C	PASSES	IEC 60695-10-2
Specific Volume	0.83cm ³ /g	ASTM D792

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