SABIC Innovative Plastics Lexan® PC1800R PC (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

PC1800R resin is a medium-high flow (MFR = 18 at 300?C/1.2kg), heat stabilized, polycarbonate product with mold release designed for use in the general purpose molding market.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-PC1800R-PC-Asia-Pacific.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.20 g/cc	0.0434 lb/in³	ISO 1183
Moisture Absorption at Equilibrium	0.35 %	0.35 %	ASTM D570
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 @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	18 g/10 min @Load 1.20 kg, Temperature 300 °C	18 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	17 g/10 min @Load 1.20 kg, Temperature 300 °C	17 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
	120	120	ISO 2039-2
Tensile Strength, Yield	63.0 MPa	9140 psi	Type I, 50 mm/min; ASTM D638
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	>= 70 %	>= 70 %	Type I, 50 mm/min; ASTM D638
	>= 70 %	>= 70 %	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

Mechanical Properties	Metric	English	Comments
Tensile Modulus	2.35 GPa	341 ksi	50 mm/min; ASTM D638
	2.35 GPa	341 ksi	1 mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	1.3 mm/min, 50 mm span; ASTM D790
	90.0 MPa	13100 psi	2 mm/min; ISO 178
Flexural Modulus	2.30 GPa	334 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.30 GPa	334 ksi	2 mm/min; ISO 178
Izod Impact, Notched	7.00 J/cm	13.1 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	70.0 kJ/m²	33.3 ft-lb/in²	80*10*3; ISO 180/1A
	12.0 kJ/m² @Temperature -30.0 °C	5.71 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
Dart Drop, Total Energy	65.0 J	47.9 ft-lb	Instrumented Impact Energy @ peak; ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 µm/m-°C @Temperature -40.0 - 95.0 °C	38.9 µin/in-°F @Temperature -40.0 - 203 °F	ASTM E 831
	70.0 µm/m-°C @Temperature 23.0 - 80.0 °C	38.9 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft²-°F	ASTM C177
	0.200 W/m-K	1.39 BTU-in/hr-ft²-°F	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	135 °C	275 °F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	135 °C @Thickness 3.20 mm	275 °F @Thickness 0.126 in	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	124 °C	255 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af

Thermal Properties	Metric	English	Comments
	124 °C @Thickness 3.20 mm	255 °F @Thickness 0.126 in	ASTM D648
Vicat Softening Point	141 °C	286 °F	Rate B/50; ASTM D1525
	141 °C	286 °F	Rate B/50; ISO 306
Flammability, UL94	V-2 @Thickness 1.60 mm	V-2 @Thickness 0.0630 in	UL 94

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542
	1.586	1.586	ISO 489
Haze	<= 0.80 % @Thickness 2.54 mm	<= 0.80 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	88 - 90 %	88 - 90 %	2.54 mm; ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257
	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Dielectric Constant	3.0 @Frequency 60.0 Hz	3.0 @Frequency 60.0 Hz	ASTM D150
	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	ASTM D150
	3.0 @Frequency 60.0 Hz	3.0 @Frequency 60.0 Hz	IEC 60250
	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	IEC 60250
Dielectric Strength	27.0 kV/mm @Thickness 1.60 mm	686 kV/in @Thickness 0.0630 in	ASTM D149
	27.0 kV/mm @Thickness 1.60 mm	686 kV/in @Thickness 0.0630 in	IEC 60243-1
Dissipation Factor	0.0010	0.0010	ASTM D150

Electrical Properties	Metric	English	Comments
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0010 @Frequency 60.0 Hz	0.0010 @Frequency 60.0 Hz	IEC 60250
	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	IEC 60250
	0.010 @Frequency 1.00e+6 Hz	0.010 @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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