SABIC Innovative Plastics Lexan® 3412ECR PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan* 3412ECR Polycarbonate (PC) resin is a 20% glass fiber filled, injection moldable grade. This non-chlorinated, non-brominated flame retardant GF-PC has an UL-94 V0 rating and is available in various opaque color options. Lexan 3412ECR is a resin designed to meet the needs of high stiffness applications.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-3412ECR-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.30 g/cc	1.30 g/cc	ASTM D792
Density	1.36 g/cc	0.0491 lb/in³	ISO 1183
Moisture Absorption	0.120 %	0.120 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.29 %	0.29 %	ISO 62
Linear Mold Shrinkage, Flow	0.0020 - 0.0050 cm/cm @Thickness 3.20 mm	0.0020 - 0.0050 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0020 - 0.0050 cm/cm @Thickness 3.20 mm	0.0020 - 0.0050 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	7.0 g/10 min @Load 1.20 kg, Temperature 300 °C	7.0 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
Tensile Strength at Break	87.0 MPa	12600 psi	Type I, 5 mm/min; ASTM D638
	90.0 MPa	13100 psi	5 mm/min; ISO 527
Tensile Strength, Yield	90.0 MPa	13100 psi	Type I, 5 mm/min; ASTM D638
	95.0 MPa	13800 psi	5 mm/min; ISO 527
Elongation at Break	3.2 %	3.2 %	5 mm/min; ISO 527
Elongation at Yield	2.8 %	2.8 %	5 mm/min; ISO 527
	3.1 %	3.1 %	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
	6.00 GPa	870 ksi	1 mm/min; ISO 527
Flexural Yield Strength	140 MPa	20300 psi	2 mm/min; ISO 178
	156 MPa	22600 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	5.00 GPa	725 ksi	1.3 mm/min, 50 mm span; ASTM D790
	5.50 GPa	798 ksi	2 mm/min; ISO 178
Izod Impact, Notched	1.10 J/cm	2.06 ft-lb/in	ASTM D256
	1.07 J/cm @Temperature -30.0 °C	2.00 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Notched (ISO)	7.00 kJ/m²	3.33 ft-lb/in²	80*10*3; ISO 180/1A
	6.00 kJ/m² @Temperature -30.0 °C	2.86 ft-lb/in² @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	35.0 kJ/m²	16.7 ft-lb/in²	80*10*3; ISO 180/1U
	35.0 kJ/m² @Temperature -30.0 °C	16.7 ft-lb/in² @Temperature -22.0 °F	80*10*3; ISO 180/1U
Charpy Impact Unnotched	4.00 J/cm²	19.0 ft-lb/in²	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	4.00 J/cm² @Temperature -30.0 °C	19.0 ft-lb/in² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.600 J/cm²	2.86 ft-lb/in²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	0.500 J/cm² @Temperature -30.0 °C	2.38 ft-lb/in² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	20.0 J @Temperature 23.0 °C	14.8 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	30.0 µm/m-°C @Temperature -40.0 - 40.0 °C	16.7 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	30.0 µm/m-°C	16.7 µin/in-°F	ISO 11359-2

Thermal Properties	Metric	English	Comments
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
CTE, linear, Transverse to Flow	70.0 µm/m-°C @Temperature -40.0 - 40.0 °C	38.9 µin/in-°F @Temperature -40.0 - 104 °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
Deflection Temperature at 0.46 MPa (66 psi)	141 °C	286 °F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
Deflection Temperature at 1.8 MPa (264 psi)	136 °C	277 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	141 °C @Thickness 3.20 mm	286 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	145 °C	293 °F	Rate B/50; ISO 306
	146 °C	295 °F	Rate B/120; ISO 306
	147 °C	297 °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
UL RTI, Mechanical without Impact	130 °C	266 °F	UL 746B
Flammability, UL94	V-0 @Thickness 1.50 mm	V-0 @Thickness 0.0591 in	UL 94
	5VA @Thickness 3.00 mm	5VA @Thickness 0.118 in	UL 94
Oxygen Index	40 %	40 %	ISO 4589
Glow Wire Test	825 °C	1520 °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	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	3.3	3.3	IEC 60250

Electrical Properties	Metric	English	Comments
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.3 @Frequency 50.0 - 60.0 Hz	3.3 @Frequency 50.0 - 60.0 Hz	IEC 60250
Dissipation Factor	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	IEC 60250
	0.020 @Frequency 50.0 - 60.0 Hz	0.020 @Frequency 50.0 - 60.0 Hz	IEC 60250
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	Tungsten; ASTM D495
Comparative Tracking Index	175 - 250 V	175 - 250 V	UL 746A
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	UL 746A

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

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