

SABIC Innovative Plastics Lexan® 3412R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

20% GR, provides improved mechanical properties and UL94 V-1 rated at 0.058". Internal mold release added.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-3412R-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.35 g/cc	1.35 g/cc	ASTM D792
Density	1.356 g/cc	0.04899 lb/in ³	ASTM D792
Water Absorption	0.16 % @Time 86400 sec	0.16 % @Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	0.29 %	0.29 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0010 - 0.0030 cm/cm @Thickness 3.20 mm	0.0010 - 0.0030 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	4.3 g/10 min @Load 1.20 kg, Temperature 300 °C	4.3 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	91	91	ASTM D785
Hardness, Rockwell R	122	122	ASTM D785
Tensile Strength at Break	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	5.0 %	5.0 %	Type I, 5 mm/min; ASTM D638
Flexural Yield Strength	131 MPa	19000 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	5.51 GPa	799 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	1.06 J/cm	1.99 ft-lb/in	ASTM D256
Izod Impact, Unnotched	10.14 J/cm	19.00 ft-lb/in	ASTM D4812
Tensile Impact Strength	63.0 kJ/m ²	30.0 ft-lb/in ²	Type S; ASTM D1822
Dart Drop, Total Energy	5.00 J	3.69 ft-lb	ASTM D3029
Taber Abrasion, mg/1000 Cycles	17	17	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	27.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	15.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^{\circ}\text{C}$	@Temperature -40.0 - 203 $^{\circ}\text{F}$	
Specific Heat Capacity	1.17 J/g- $^{\circ}\text{C}$	0.280 BTU/lb- $^{\circ}\text{F}$	ASTM C351
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	148 $^{\circ}\text{C}$	298 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	146 $^{\circ}\text{C}$	295 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	165 $^{\circ}\text{C}$	329 $^{\circ}\text{F}$	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-1	V-1	UL 94
	@Thickness 1.47 mm	@Thickness 0.0579 in	
	V-0	V-0	UL 94
	@Thickness 2.99 mm	@Thickness 0.118 in	
	5VA	5VA	UL 94
	@Thickness 2.99 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+17$ ohm-cm	$\geq 1.00\text{e}+17$ ohm-cm	ASTM D257
Dielectric Constant	3.13	3.13	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	19.2 kV/mm	488 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.00090	0.00090	ASTM D150

Electrical Properties	@Frequency 50.0 - 60.0 Metric Hz	@Frequency 50.0 - 60.0 English Hz	Comments
	0.0073	0.0073	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	Tungsten; ASTM D495
Comparative Tracking Index	0.00 - 100 V	0.00 - 100 V	UL 746A
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	0.00 - 15 arcs	0.00 - 15 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
Specific Volume	0.74cm ³ /g	ASTM D792

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