LEXAN* 3412R Resin

Polycarbonate

SABIC Innovative Plastics

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

General	
Material Status	• Commercial: Active
Availability	• North America
Filler / Reinforcement	• Glass Fiber Reinforcement, 20% Filler by Weight
Additive	• Mold Release
Processing Method	• Injection Molding
Multi-Point Data	• Coefficient of Thermal Expansion vs. Temperature (ASTM E831) • Flexural DMA (ASTM D4065) • Shear DMA (ASTM D4065) • Thermal Conductivity vs. Temperature (ASTM E1530)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			ASTM D792
--	1.35	1.35 g/cm³	
--	1.36 g/cm³	1.36 g/cm³	
Specific Volume	20.5 in³/lb	0.741 cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	4.3 g/10 min	4.3 g/10 min	ASTM D1238
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.0010 to 0.0030 in/in	0.10 to 0.30 %	Internal Method
Water Absorption			ASTM D570
24 hr	0.16 %	0.16 %	
Equilibrium, 73°F (23°C)	0.29 %	0.29 %	
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Strength [2] (Break)	16000 psi	110 MPa	ASTM D638
Tensile Elongation [2] (Break)	5.0 %	5.0 %	ASTM D638
Flexural Modulus [3] (1.97 in (50.0 mm) Span)	800000 psi	5520 MPa	ASTM D790
Flexural Strength [3]			ASTM D790
Yield, 1.97 in (50.0 mm) Span	19000 psi	131 MPa	
Taber Abrasion Resistance			ASTM D1044
1000 Cycles, 1000 g, CS-17 Wheel	17.0 mg	17.0 mg	
Impact	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Notched Izod Impact (73°F (23°C))	2.0 ft·lb/in	110 J/m	ASTM D256
Unnotched Izod Impact (73°F (23°C))	19 ft·lb/in	1000 J/m	ASTM D4812
Gardner Impact (73°F (23°C))	48.0 in·lb	5.42 J	ASTM D3029
Tensile Impact Strength [4]	30.0 ft·lb/in²	63.0 kJ/m²	ASTM D1822
Hardness	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Rockwell Hardness			ASTM D785
M-Scale	91	91	
R-Scale	122	122	
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Unannealed, 0.252 in (6.40 mm)	300 °F	149 °C	
264 psi (1.8 MPa), Unannealed, 0.252 in (6.40 mm)	295 °F	146 °C	
Vicat Softening Temperature	330 °F	166 °C	ASTM D1525 [5]
CLTE - Flow (-40 to 203°F (-40 to 95°C))	0.000015 in/in/°F	0.000027 cm/cm/°C	ASTM E831
Specific Heat	0.280 Btu/lb/°F	1170 J/kg/°C	ASTM C351
Thermal Conductivity	1.5 Btu·in/hr/ft²/°F	0.21 W/m/K	ASTM C177
Electrical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Volume Resistivity	> 1.0E+17 ohm·cm	> 1.0E+17 ohm·cm	ASTM D257

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Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Dielectric Strength			ASTM D149
0.126 in (3.20 mm), in Air	490 V/mil	19 kV/mm	
Dielectric Constant			ASTM D150
50 Hz	3.17	3.17	
60 Hz	3.17	3.17	
1 MHz	3.13	3.13	
Dissipation Factor			ASTM D150
50 Hz	0.00090	0.00090	
60 Hz	0.00090	0.00090	
1 MHz	0.0073	0.0073	
Arc Resistance (PLC) [6]	PLC 7	PLC 7	ASTM D495

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.0580 in (1.47 mm)	V-1	V-1	
0.118 in (3.00 mm)	• V-0 • 5VA	• V-0 • 5VA	

UL	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Str	266 °F	130 °C	UL 746
RTI Imp	266 °F	130 °C	UL 746
RTI Elec	266 °F	130 °C	UL 746
Comparative Tracking Index (CTI) (PLC)	PLC 5	PLC 5	UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)			UL 746
--	PLC 3	PLC 3	
Hot-wire Ignition (HWI) (PLC)	PLC 0	PLC 0	UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 4	PLC 4	UL 746

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	250 °F	121 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Drying Time, Maximum	48 hr	48 hr
Suggested Max Moisture	0.020 %	0.020 %
Suggested Shot Size	40 to 60 %	40 to 60 %
Rear Temperature	560 to 600 °F	293 to 316 °C
Middle Temperature	580 to 620 °F	304 to 327 °C
Front Temperature	600 to 640 °F	316 to 338 °C
Nozzle Temperature	590 to 630 °F	310 to 332 °C
Processing (Melt) Temp	600 to 640 °F	316 to 338 °C
Mold Temperature	180 to 240 °F	82.2 to 116 °C
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	40 to 70 rpm	40 to 70 rpm
Vent Depth	0.0010 to 0.0030 in	0.025 to 0.076 mm

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Type I, 0.20 in/min (5.0 mm/min)

[3] 0.051 in/min (1.3 mm/min)

[4] Type S

[5] Rate B (120°C/h), Loading 2 (50 N)

[6] Tungsten Electrode

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