

LEXAN™ 3412ECR resin

Polycarbonate

SABIC Innovative Plastics

Message:

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.

General Information			
UL YellowCard	E121562-220879		
Filler / Reinforcement	Glass Fiber,20% Filler by Weight		
Additive	Flame Retardant		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	High Stiffness		
Appearance	Opaque		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.30	g/cm ³	ASTM D792
--	1.36	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal Method
Flow : 3.20 mm	0.20 to 0.50	%	
Across Flow : 3.20 mm	0.20 to 0.50	%	
Water Absorption			ISO 62
Saturation, 23°C	0.29	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	5500	MPa	ASTM D638
--	6000	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	90.0	MPa	ASTM D638
Yield	95.0	MPa	ISO 527-2/5
Break ³	87.0	MPa	ASTM D638
Break	90.0	MPa	ISO 527-2/5

Tensile Elongation			
Yield ⁴	3.1	%	ASTM D638
Yield	2.8	%	ISO 527-2/5
Break	3.2	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁵	5000	MPa	ASTM D790
-- ⁶	5500	MPa	ISO 178
Flexural Stress			
--	140	MPa	ISO 178
Yield, 50.0 mm Span ⁷	156	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁸			ISO 179/1eA
-30°C	5.0	kJ/m ²	
23°C	6.0	kJ/m ²	
Charpy Unnotched Impact Strength ⁹			ISO 179/1eU
-30°C	40	kJ/m ²	
23°C	40	kJ/m ²	
Notched Izod Impact			
-30°C	110	J/m	ASTM D256
23°C	110	J/m	ASTM D256
-30°C ¹⁰	6.0	kJ/m ²	ISO 180/1A
23°C ¹¹	7.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹²			ISO 180/1U
-30°C	35	kJ/m ²	
23°C	35	kJ/m ²	
Instrumented Dart Impact (23°C, Total Energy)	20.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed, 64.0 mm Span ¹³	141	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	141	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁴	136	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	147	°C	ASTM D1525 ¹⁵
--	145	°C	ISO 306/B50
--	146	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 40°C	3.0E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	3.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	7.0E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2

RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	130	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Relative Permittivity			IEC 60250
50 Hz	3.30		
60 Hz	3.30		
1 MHz	3.30		
Dissipation Factor			IEC 60250
50 Hz	0.020		
60 Hz	0.020		
1 MHz	0.010		
Arc Resistance ¹⁶	PLC 7		ASTM D495
Comparative Tracking Index (CTI)	PLC 3		UL 746
High Amp Arc Ignition (HAI)	PLC 3		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3		UL 746
Hot-wire Ignition (HWI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.00 mm)	825	°C	IEC 60695-2-13
Oxygen Index	40	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	266 to 288	°C	
Middle Temperature	277 to 299	°C	
Front Temperature	288 to 310	°C	
Nozzle Temperature	282 to 304	°C	
Processing (Melt) Temp	288 to 310	°C	
Mold Temperature	71.1 to 93.3	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			

1.	5.0 mm/min
2.	Type I, 5.0 mm/min
3.	Type I, 5.0 mm/min
4.	Type I, 5.0 mm/min
5.	1.3 mm/min
6.	2.0 mm/min
7.	1.3 mm/min
8.	80*10*3 sp=62mm
9.	80*10*3 sp=62mm
10.	80*10*3
11.	80*10*3
12.	80*10*3
13.	80*10*4 mm
14.	80*10*4 mm
15.	Rate B (120°C/h), Loading 2 (50 N)
16.	Tungsten Electrode

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