

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	E45329-302577		
Filler / Reinforcement	Glass fiber reinforced material, 20% filler by weight		
Additive	Flame retardancy		
Features	Chlorine Free		
	Rigidity, high		
	Bromine-free		
	Flame retardancy		
RoHS Compliance	RoHS compliance		
Appearance	Opacity		
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: 3.20mm	0.20 - 0.50	%	Internal method
Transverse flow: 3.20mm	0.20 - 0.50	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.29	%	ISO 62
Equilibrium, 23°C, 50% RH	0.12	%	ISO 62
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
Fracture ³	87.0	MPa	ASTM D638

Fracture	90.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁴	3.1	%	ASTM D638
Yield	2.8	%	ISO 527-2/5
Fracture	3.2	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁵	5000	MPa	ASTM D790
-- ⁶	5500	MPa	ISO 178
Flexural Stress			
--	140	MPa	ISO 178
Yield, 50.0mm 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	ISO 179/1eA
23°C	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ⁹			ISO 179/1eU
-30°C	40	kJ/m ²	ISO 179/1eU
23°C	40	kJ/m ²	ISO 179/1eU
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	ISO 180/1U
23°C	35	kJ/m ²	ISO 180/1U
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, 64.0mm span ¹³	141	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	141	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm 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
Linear thermal expansion coefficient			
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
Lateral: -40 to 40°C	7.0E-5	cm/cm/°C	ASTM E831

Lateral: 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	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		IEC 60250
60 Hz	3.30		IEC 60250
1 MHz	3.30		IEC 60250
Dissipation Factor			IEC 60250
50 Hz	0.020		IEC 60250
60 Hz	0.020		IEC 60250
1 MHz	0.010		IEC 60250
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		UL 94
3.00 mm	5VA		UL 94
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 - 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 60	%	
Rear Temperature	266 - 288	°C	
Middle Temperature	277 - 299	°C	
Front Temperature	288 - 310	°C	
Nozzle Temperature	282 - 304	°C	
Processing (Melt) Temp	288 - 310	°C	
Mold Temperature	71.1 - 93.3	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	40 - 70	rpm	
Vent Depth	0.025 - 0.076	mm	

NOTE	
1.	5.0 mm/min
2.	Type 1, 5.0 mm/min
3.	Type 1, 5.0 mm/min
4.	Type 1, 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.	标准 B (120°C/h), 载荷2 (50N)
16.	Tungsten electrode

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