

LEXAN™ EXL1414 resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN EXL1414 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade. This resin offers extreme low temperature (-40 C) ductility in combination with excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1414 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications.

General Information			
Features	Copolymer		
	Workability, good		
	Fast molding cycle		
	Medium liquidity		
	General		
	Good demoulding performance		
	ductility		
Uses	General		
RoHS Compliance	RoHS compliance		
Appearance	Opacity		
	Available colors		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.18	g/cm ³	ASTM D792
--	1.19	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	9.00	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow: 3.20mm	0.40 - 0.80	%	Internal method
Transverse flow: 3.20mm	0.40 - 0.80	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.35	%	ISO 62
Equilibrium, 23°C, 50% RH	0.15	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
L scale	89		ASTM D785
Class r	121		ASTM D785
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			
-- ¹	2020	MPa	ASTM D638
--	2150	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	55.5	MPa	ASTM D638
Yield	57.0	MPa	ISO 527-2/50
Fracture ³	50.3	MPa	ASTM D638
Fracture	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Fracture ⁵	98	%	ASTM D638
Fracture	120	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2230	MPa	ASTM D790
-- ⁷	2250	MPa	ISO 178
Flexural Stress			
--	85.0	MPa	ISO 178
Yield, 50.0mm span ⁸	92.4	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	65	kJ/m ²	ISO 179/1eA
23°C	70	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact			
-30°C	770	J/m	ASTM D256
23°C	870	J/m	ASTM D256
-30°C ¹¹	60	kJ/m ²	ISO 180/1A
23°C ¹²	70	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹³			ISO 180/1U
-30°C	No Break		ISO 180/1U
23°C	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	70.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	139	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ¹⁴	140	°C	ISO 75-2/Be
1.8 MPa, unannealed, 3.20mm	124	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ¹⁵	128	°C	ISO 75-2/Ae

Vicat Softening Temperature			
--	145	°C	ASTM D1525, ISO 306/B50 11 ¹⁶
--	146	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	7.0E-5	cm/cm/°C	ASTM E831
Flow: 23 to 80°C	7.2E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.5E-5	cm/cm/°C	ASTM E831
Lateral: 23 to 80°C	7.2E-5	cm/cm/°C	ISO 11359-2
RTI Elec	130	°C	UL 746
RTI Imp	120	°C	UL 746
RTI	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	ASTM D257
Volume Resistivity	> 1.0E+15	ohms·cm	ASTM D257
Dielectric Strength (0.800 mm, in Oil)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
100 Hz	2.68		ASTM D150
1 MHz	2.64		ASTM D150
Dissipation Factor			ASTM D150
100 Hz	1.2E-3		ASTM D150
1 MHz	9.3E-3		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.400 mm)	HB		UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.800 mm	850	°C	IEC 60695-2-12
1.00 mm	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	875	°C	IEC 60695-2-13
3.00 mm	875	°C	IEC 60695-2-13
Injection	Nominal Value	Unit	
Drying Temperature	120	°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	270 - 295	°C	
Middle Temperature	280 - 305	°C	
Front Temperature	295 - 315	°C	
Nozzle Temperature	290 - 310	°C	
Processing (Melt) Temp	295 - 315	°C	

Mold Temperature	70.0 - 95.0	°C
Back Pressure	0.300 - 0.700	MPa
Screw Speed	40 - 70	rpm
Vent Depth	0.025 - 0.076	mm

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

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