

LEXAN™ FXE1414 resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN FXE1414 polycarbonate (PC) siloxane copolymer resin is a special effects fluorescent, 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.

General Information			
Features	Copolymer		
	Ductile		
	Fast Molding Cycle		
	Good Mold Release		
	Good Processability		
	Medium Flow		
Appearance	Opaque		
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 - Flow (3.20 mm)	0.40 to 0.80	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.35	%	
Equilibrium, 23°C, 50% RH	0.15	%	
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
Break ³	50.3	MPa	ASTM D638
Break	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50

Break ⁵	98	%	ASTM D638
Break	120	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2230	MPa	ASTM D790
-- ⁷	2250	MPa	ISO 178
Flexural Stress			
--	85.0	MPa	ISO 178
Yield, 50.0 mm 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	
23°C	70	kJ/m ²	
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
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		
23°C	No Break		
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, 3.20 mm	139	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	124	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁴	128	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	145	°C	ASTM D1525, ISO 306/B50 ¹⁵
--	146	°C	ISO 306/B120
CLTE			
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
Transverse : -40 to 40°C	7.5E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.2E-5	cm/cm/°C	ISO 11359-2
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	271 to 293	°C
Middle Temperature	282 to 304	°C
Front Temperature	293 to 316	°C
Nozzle Temperature	288 to 310	°C
Processing (Melt) Temp	293 to 316	°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.	50 mm/min
2.	Type I, 50 mm/min
3.	Type I, 50 mm/min
4.	Type I, 50 mm/min
5.	Type I, 50 mm/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.	Rate B (120°C/h), Loading 2 (50 N)

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