LEXAN™ EXL1444 resin

Polycarbonate

SABIC Innovative Plastics

Message:

Lexan* EXL1444 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade suitable for FDA compliant applications. This resin offers extreme low temperature (-40°C) ductility, exhibits excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. Lexan EXL1444 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of food contact applications.

General Information			
Features	Copolymer Ductile Food Contact Acceptable Good Mold Release Good Processability Medium Flow		
Agency Ratings	FDA Unspecified Rating		
Appearance	Colors Available Opaque		
Processing Method	Injection Molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	1.18	g/cm³	ASTM D792
--	1.19	g/cm³	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	cm³/10min	ISO 1133
Molding Shrinkage			Internal Method
Flow [1]	0.40 to 0.80	%	
Flow : 3.20 mm	0.40 to 0.80	%	
Across Flow : 3.20 mm	0.40 to 0.80	%	
Water Absorption			ISO 62
Saturation, 23°C	0.35	%	
Equilibrium, 23°C, 50% RH	0.15	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
L-Scale	89		
R-Scale	121		
Mechanical	**Nominal Value**	**Unit**	**Test Method**

Tensile Modulus			
-- [2]	2020	MPa	ASTM D638
--	2150	MPa	ISO 527-2/1
Tensile Strength			
Yield [3]	55.0	MPa	ASTM D638
Yield	57.0	MPa	ISO 527-2/50
Break [4]	50.0	MPa	ASTM D638
Break	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield [5]	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break [6]	98	%	ASTM D638
Break	120	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span [7]	2240	MPa	ASTM D790
-- [8]	2250	MPa	ISO 178
Flexural Stress			
--	85.0	MPa	ISO 178
Yield, 50.0 mm Span [9]	92.0	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [10]			ISO 179/1eA
-30°C	65	kJ/m²	
23°C	70	kJ/m²	
Charpy Unnotched Impact Strength [11]			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	780	J/m	ASTM D256
23°C	870	J/m	ASTM D256
-30°C [12]	60	kJ/m²	ISO 180/1A
23°C [13]	70	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength [14]			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	140	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span [15]	140	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	124	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span [16]	128	°C	ISO 75-2/Ae

Vicat Softening Temperature			
--	145	°C	ASTM D1525, ISO 306/B50 12 [17]
--	146	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
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
RTI Elec	130	°C	UL 746
RTI Imp	110	°C	UL 746
RTI Str	120	°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		
1 MHz	2.64		
Dissipation Factor			ASTM D150
100 Hz	1.2E-3		
1 MHz	9.3E-3		
Flammability	**Nominal Value**	**Unit**	**Test Method**
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.00 mm)	850	°C	IEC 60695-2-13
Oxygen Index	37	%	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	217 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	71.0 to 93.0	°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.	Tensile Bar
2.	50 mm/min
3.	Type I, 50 mm/min
4.	Type I, 50 mm/min
5.	Type I, 50 mm/min
6.	Type I, 50 mm/min
7.	1.3 mm/min
8.	2.0 mm/min
9.	1.3 mm/min
10.	80*10*3 sp=62mm
11.	80*10*3 sp=62mm
12.	80*10*3
13.	80*10*3
14.	80*10*3
15.	120*10*4 mm
16.	120*10*4 mm
17.	Rate B (120°C/h), Loading 2 (50 N)

Recommended distributors for this material

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