

LEXAN™ EXL1413T resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN EXL1413T polycarbonate (PC) siloxane copolymer resin is a transparent injection molding grade. This resin offers excellent low temperature (-30 °C) ductility in combination with medium flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1413T resin is a general purpose product available in transparent and opaque colors and is an excellent candidate for a broad range of applications.

General Information			
Features	Copolymer		
	Ductile		
	Fast Molding Cycle		
	General Purpose		
	Good Processability		
	Medium Flow		
Uses	General Purpose		
Appearance	Clear/Transparent		
	Opaque		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19	g/cm ³	ASTM D792, 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)	9.50	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal Method
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	0.12	%	
Equilibrium, 23°C, 50% RH	0.093	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (L-Scale)	90		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2220	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	58.0	MPa	ASTM D638

Yield	57.9	MPa	ISO 527-2/50
Break ³	64.1	MPa	ASTM D638
Break	61.5	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	5.8	%	ASTM D638
Yield	5.5	%	ISO 527-2/50
Break ⁵	130	%	ASTM D638
Break	120	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2220	MPa	ASTM D790
-- ⁷	2150	MPa	ISO 178
Flexural Stress			
--	90.2	MPa	ISO 178
Yield, 50.0 mm Span ⁸	94.3	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	60	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	800	J/m	ASTM D256
23°C	890	J/m	ASTM D256
-30°C ¹¹	55	kJ/m ²	ISO 180/1A
23°C ¹²	65	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			ASTM D3763
-30°C, Total Energy	85.0	J	
23°C, Total Energy	82.4	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, Unannealed, 3.20 mm	124	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁴	119	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	141	°C	ASTM D1525, ISO 306/B50 ¹¹ ¹⁵
--	142	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			

Flow : -40 to 95°C	7.2E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	7.2E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 95°C	7.9E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.9E-5	cm/cm/°C	ISO 11359-2
RTI Elec	130	°C	UL 746
RTI Str	130	°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
Flammability	Nominal Value	Unit	Test Method
Flame Rating (2.50 mm)	V-2		UL 94
Glow Wire Flammability Index (3.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
0.800 mm	825	°C	
3.00 mm	825	°C	
Optical	Nominal Value	Unit	Test Method
Transmittance (2540 μm)	82.0	%	ASTM D1003
Haze (2540 μm)	3.0	%	ASTM D1003
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.	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.	80*10*4 mm
15.	Rate A (50°C/h), Loading 2 (50 N)

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