LEXAN™ EXL1414T resin

Monday, March 09, 2015

General Information

Product Description

LEXAN EXL1414T polycarbonate (PC) siloxane copolymer resin is a transparent injection molding grade. This resin offers extreme low temperature (-40 °C) ductility in combination with medium flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1414T resin is a general purpose product available in transparent and opaque colors and is an excellent candidate for a broad range of applications.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific		
Features	• Copolymer • Ductile	• Fast Molding Cycle • General Purpose	• Good Processability • Medium Flow
Uses	• General Purpose		
Appearance	• Clear/Transparent	• Opaque	
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19		ASTM D792
Density	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)	0.580	in³/10min	ISO 1133
Molding Shrinkage - Flow (0.126 in)	4.0E-3 to 8.0E-3	in/in	Internal Method
Molding Shrinkage - Across Flow (0.126 in)	4.0E-3 to 8.0E-3	in/in	Internal Method
Water Absorption (Saturation, 73°F)	0.12	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.093	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [2]	317000	psi	ASTM D638
Tensile Modulus	334000	psi	ISO 527-2/1
Tensile Strength [3] (Yield)	8350	psi	ASTM D638
Tensile Stress (Yield)	8240	psi	ISO 527-2/50
Tensile Strength [3] (Break)	8570	psi	ASTM D638
Tensile Stress (Break)	8020	psi	ISO 527-2/50
Tensile Elongation [3] (Yield)	5.6	%	ASTM D638
Tensile Strain (Yield)	5.4	%	ISO 527-2/50
Tensile Elongation [3] (Break)	120	%	ASTM D638
Tensile Strain (Break)	110	%	ISO 527-2/50
Flexural Modulus [4] (1.97 in Span)	317000	psi	ASTM D790
Flexural Modulus [5]	308000	psi	ISO 178

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Mechanical	Nominal Value	Unit	Test Method
Flexural Stress [5, 6]	12900	psi	ISO 178
Flexural Strength [4] (Yield, 1.97 in Span)	13300	psi	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [7]			ISO 179/1eA
-22°F	29	ft·lb/in²	
73°F	33	ft·lb/in²	
Charpy Unnotched Impact Strength [7]			ISO 179/1eU
-22°F	No Break		
73°F	No Break		
Notched Izod Impact			ASTM D256
-22°F	13	ft·lb/in	
73°F	15	ft·lb/in	
Notched Izod Impact Strength [8]			ISO 180/1A
-22°F	26	ft·lb/in²	
73°F	31	ft·lb/in²	
Unnotched Izod Impact Strength [8]			ISO 180/1U
-22°F	No Break		
73°F	No Break		
Instrumented Dart Impact			ASTM D3763
-22°F, Total Energy	685	in·lb	
73°F, Total Energy	668	in·lb	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (L-Scale)	87		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed, 0.126 in	250	°F	
Heat Deflection Temperature [9]			ISO 75-2/Af
264 psi, Unannealed, 2.52 in Span	241	°F	
Vicat Softening Temperature	282	°F	ASTM D1525 [10]
Vicat Softening Temperature			
--	281	°F	ISO 306/B50
--	283	°F	ISO 306/B120
Ball Pressure Test (257°F)	Pass		IEC 60695-10-2
CLTE - Flow (-40 to 203°F)	3.7E-5	in/in/°F	ASTM E831
CLTE - Flow (73 to 176°F)	3.7E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (-40 to 203°F)	4.4E-5	in/in/°F	ASTM E831
CLTE - Transverse (73 to 176°F)	4.4E-5	in/in/°F	ISO 11359-2
RTI Elec	266	°F	UL 746
RTI Str	266	°F	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+15	ohm	ASTM D257
Volume Resistivity	> 1.0E+15	ohm·cm	ASTM D257

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Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.0315 in	HB		
0.118 in	V-2		
Glow Wire Flammability Index (0.118 in)	1760	°F	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
0.0315 in	1560	°F	
0.118 in	1560	°F	

Optical	Nominal Value	Unit	Test Method
Transmittance (100 mil)	82.0	%	ASTM D1003
Haze (100 mil)	3.0	%	ASTM D1003

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	250	°F
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	520 to 560	°F
Middle Temperature	540 to 580	°F
Front Temperature	560 to 600	°F
Nozzle Temperature	550 to 590	°F
Processing (Melt) Temp	560 to 600	°F
Mold Temperature	160 to 200	°F
Back Pressure	50.0 to 100	psi
Screw Speed	40 to 70	rpm
Vent Depth	1.0E-3 to 3.0E-3	in

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 2.0 in/min

[3] Type I, 2.0 in/min

[4] 0.051 in/min

[5] 0.079 in/min

[6] Yield

[7] 80*10*3 sp=62mm

[8] 80*10*3

[9] 80*10*4 mm

[10] Rate A (50°C/h), Loading 2 (50 N)