



**LEXAN™ Resin EXL1414T**  
**Americas: COMMERCIAL**

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.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 2.0 in/min	8300	psi	ASTM D 638
Tensile Stress, brk, Type I, 2.0 in/min	8500	psi	ASTM D 638
Tensile Strain, yld, Type I, 2.0 in/min	5.6	%	ASTM D 638
Tensile Strain, brk, Type I, 2.0 in/min	123.9	%	ASTM D 638
Tensile Modulus, 2.0 in/min	317000	psi	ASTM D 638
Flexural Stress, yld, 0.05 in/min, 2 in span	13300	psi	ASTM D 790
Flexural Modulus, 0.05 in/min, 2 in span	316000	psi	ASTM D 790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.4	%	ISO 527
Tensile Strain, break, 50 mm/min	108.5	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	88	MPa	ISO 178
Flexural Modulus, 2 mm/min	2120	MPa	ISO 178
Hardness, Rockwell L	87	-	ISO 2039-2
<b>IMPACT</b>			
Izod Impact, notched, 73°F	15.4	ft-lb/in	ASTM D 256
Izod Impact, notched, -22°F	13.3	ft-lb/in	ASTM D 256
Instrumented Impact Total Energy, 73°F	668	in-lb	ASTM D 3763
Instrumented Impact Total Energy, -22°F	685	in-lb	ASTM D 3763
Izod Impact, unnotched 80°10'3 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80°10'3 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U

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(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

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(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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<b>IMPACT</b>			
Izod Impact, notched 80*10*3 +23°C	65	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	55	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	60	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Vicat Softening Temp, Rate A/50	281	°F	ASTM D 1525
HDT, 264 psi, 0.125 in, unannealed	249	°F	ASTM D 648
CTE, flow, -40°F to 200°F	3.72E-05	1/°F	ASTM E 831
CTE, xflow, -40°F to 200°F	4.44E-05	1/°F	ASTM E 831
CTE, 23°C to 80°C, flow	6.7E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	pass	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	138	°C	ISO 306
Vicat Softening Temp, Rate B/120	139	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	116	°C	ISO 75/Af
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 0.125" (5)	0.4 - 0.8	%	SABIC Method
Mold Shrinkage, xflow, 0.125" (5)	0.4 - 0.8	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D 1238
Density	0.04	lb/in <sup>3</sup>	ISO 1183

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(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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<b>PHYSICAL</b>			
Water Absorption, equilibrium, 73°F	0.12	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.09	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm <sup>3</sup> /10 min	ISO 1133
<b>OPTICAL</b>			
Light Transmission, 0.1 in	82	%	ASTM D 1003
Haze, 0.1 in	3	%	ASTM D 1003
<b>ELECTRICAL</b>			
Volume Resistivity	>1.E+15	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94HB Flame Class Rating 2nd value (3)	0.031	in	UL 94
UL Recognized, 94V-2 Flame Class Rating (3)	0.118	in	UL 94
Glow Wire Flammability Index 960°C, passes at	0.118	in	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.8 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	850	°C	IEC 60695-2-13

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	250	°F
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	560 - 600	°F
Nozzle Temperature	550 - 590	°F
Front - Zone 3 Temperature	560 - 600	°F
Middle - Zone 2 Temperature	540 - 580	°F
Rear - Zone 1 Temperature	520 - 560	°F
Mold Temperature	160 - 200	°F
Back Pressure	50 - 100	psi
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.001 - 0.003	in

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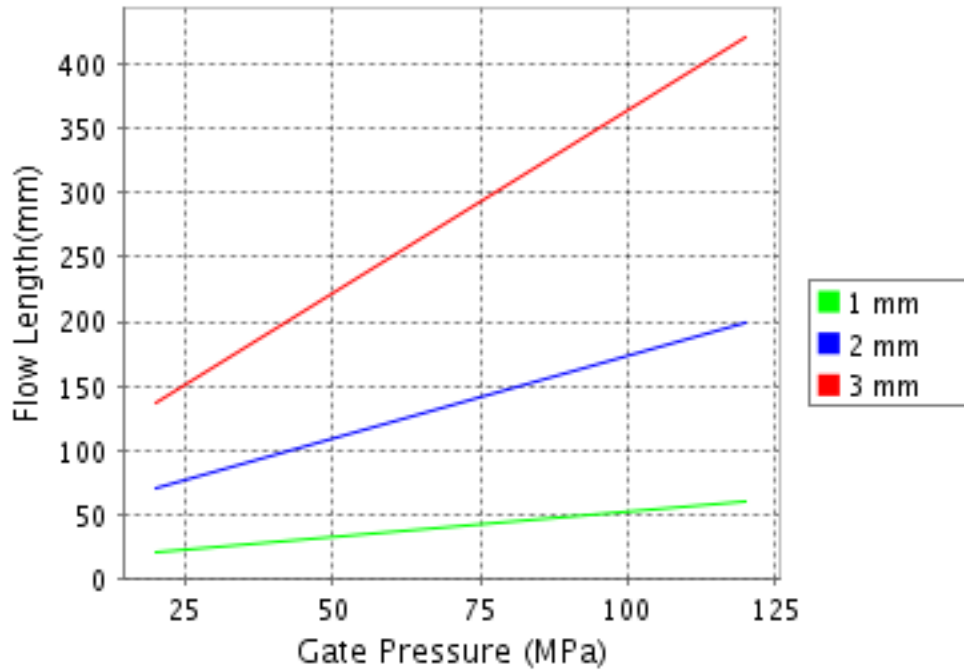
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**CALCULATED FLOW LENGTH INDICATION**  
**Moldflow® Radial Flow Analysis**  
**LEXAN® EXL1414T**  
**Melt Temperature : 305°C**  
**Mold Temperature : 85°C**



**Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.**  
**® Moldflow is a registered trademark of the Moldflow Corporation.**

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