

# LEXAN™ COPOLYMER EXL1112T

**REGION ASIA** 

## **DESCRIPTION**

LEXAN EXL1112T is based on Polycarbonate (PC) siloxane copolymer resin and is a transparent injection molding (IM) grade. This resin offers good low temperature (-20 C) ductility in combination with high flow characteristics and excellent processability, providing opportunities for shorter IM cycle times compared to standard PC resins.

## **TYPICAL PROPERTY VALUES**

PROPERTIES **TYPICAL VALUES** UNITS **TEST METHODS** MECHANICAL (1) Tensile Stress, yld, Type I, 50 mm/min 58 MPa ASTM D638 57 MPa Tensile Stress, brk, Type I, 50 mm/min ASTM D638 Tensile Strain, yld, Type I, 50 mm/min 5.7 % ASTM D638 Tensile Strain, brk, Type I, 50 mm/min 117.9 % ASTM D638 2260 Tensile Modulus, 50 mm/min ASTM D638 MPa Flexural Stress, yld, 1.3 mm/min, 50 mm span 94 MPa ASTM D790 Flexural Modulus, 1.3 mm/min, 50 mm span 2240 MPa ASTM D790 Tensile Stress, yield, 50 mm/min 57 MPa ISO 527 Tensile Stress, break, 50 mm/min 56 MPa ISO 527 Tensile Strain, yield, 50 mm/min 5.4 % ISO 527 119.4 Tensile Strain, break, 50 mm/min % ISO 527 Tensile Modulus, 1 mm/min 2340 MPa ISO 527 Flexural Stress, yield, 2 mm/min 89 MPa ISO 178 Flexural Modulus, 2 mm/min 2140 MPa ISO 178 Hardness, Rockwell L 89 ISO 2039-2 IMPACT (1) Izod Impact, notched, 23°C 736 ASTM D256 J/m Izod Impact, notched, -30°C 618 J/m ASTM D256 Instrumented Dart Impact Total Energy, 23°C 74 ASTM D3763 Izod Impact, unnotched 80\*10\*3 +23°C NB ISO 180/1U kJ/m<sup>2</sup> Izod Impact, unnotched 80\*10\*3 -30°C NB kJ/m² ISO 180/1U Izod Impact, notched 80\*10\*3 +23°C 65 kJ/m² ISO 180/1A Izod Impact, notched 80\*10\*3 -30°C 55 ISO 180/1A kJ/m² Charpy 23°C, V-notch Edgew 80\*10\*3 sp=62mm 65 kJ/m² ISO 179/1eA Charpy -30°C, V-notch Edgew 80\*10\*3 sp=62mm 45 kJ/m<sup>2</sup> ISO 179/1eA Charpy 23°C, Unnotch Edgew 80\*10\*3 sp=62mm NB ISO 179/1eU kJ/m<sup>2</sup> Charpy -30°C, Unnotch Edgew 80\*10\*3 sp=62mm ISO 179/1eU NB kJ/m² THERMAL<sup>(1)</sup> Vicat Softening Temp, Rate A/50 138 °C ASTM D1525 °C HDT, 1.82 MPa, 3.2mm, unannealed 121 ASTM D648 CTE, -40°C to 95°C, flow 7.48E-05 1/°C ASTM E831 CTE, -40°C to 95°C, xflow 1/°C 7.64E-05 ASTM E831 CTE, 23°C to 80°C, flow 1/°C ISO 11359-2 7.48E-05 150 11359-2 CTE, 23°C to 80°C, xflow 7.64E-05 1/°C CHEMISTRY THAT MATTERS © 2024 Copyright by SABIC. All rights reserved

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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 <sup>(2)</sup>	130	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(2)</sup>	120	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(2)</sup>	130	°C	UL 746B
PHYSICAL <sup>(1)</sup>			
Specific Gravity	1.19		ASTM D792
Mold Shrinkage, flow, 3.2 mm <sup>(3)</sup>	0.4 - 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm <sup>(3)</sup>	0.4 - 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	20	g/10 min	ASTM D1238
Density	1.19	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/saturated)	0.12	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.09	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	19	cm³/10 min	ISO 1133
OPTICAL <sup>(1)</sup>			
Light Transmission, 2.54 mm	82	%	ASTM D1003
Haze, 2.54 mm	3	%	ASTM D1003
ELECTRICAL <sup>(1)</sup>			
Volume Resistivity	>1.E+15	Ω.cm	ASTM D257
Surface Resistivity	>1.E+15	Ω	ASTM D257
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E207780-633835		
UL Recognized, 94HB Flame Class Rating	≥0.5	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.8 mm	850	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	825	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.8 mm	825	°C	IEC 60695-2-12
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 - 305	°C	
Rear - Zone 1 Temperature	270 – 295	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 - 60	%	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vent Depth	0.025 - 0.076	mm	

- (1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.
- (2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.
- (3) 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. The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.
- (4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

### **MORE INFORMATION**

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

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