

LEXAN™ COPOLYMER EXL1810T

REGION AMERICAS

DESCRIPTION

LEXAN EXL1810T polycarbonate (PC) siloxane copolymer resin is a transparent injection molding grade. This resin offers cold temperature (0 °C) ductility in combination with very high flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC resin. LEXAN EXL1810T resin is a general purpose product available in transparent and opaque colors and is an excellent candidate for a broad range of applications.

TYPICAL PROPERTY VALUES

Revision 20170913

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	59	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	58	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	118.9	%	ASTM D 638
Tensile Modulus, 50 mm/min	2360	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	99	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2350	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	59	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.4	%	ISO 527
Tensile Strain, break, 50 mm/min	118.6	%	ISO 527
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	92	MPa	ISO 178
Flexural Modulus, 2 mm/min	2250	MPa	ISO 178
Hardness, Rockwell L	90	-	ISO 2039-2
IMPACT			
Izod Impact, notched, 23°C	702	J/m	ASTM D 256
Izod Impact, notched, -30°C	220	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	79	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	60	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	30	kJ/m ²	ISO 180/1A

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Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	65	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	40	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate A/50	138	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D 648
CTE, -40°C to 95°C, flow	6.5E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, xflow	7.4E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	6.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.4E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	137	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	117	°C	ISO 75/Af
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (5)	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	35	g/10 min	ASTM D 1238
Density	1.19	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.12	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.09	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	33	cm ³ /10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	82	%	ASTM D 1003
Haze, 2.54 mm	3	%	ASTM D 1003
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.8 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	850	°C	IEC 60695-2-13

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
INJECTION MOLDING			
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	%	
Vent Depth	0.025 – 0.076	mm	

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