

# LEXAN<sup>TM</sup> COPOLYMER ML6411

REGION EUROPE

## DESCRIPTION

LEXAN ML6411 polycarbonate (PC) siloxane resin, is a high flow opaque injection molding (IM) grade with very low temperature ductility characteristics. This grade offers UL94 V0 @ 1.5mm and 5VA @ 3.0mm flame retardancy based on non-chlorine, non-bromine FR systems. LEXAN ML6411 resin offers excellent processing characteristics with opportunity for shorter IM cycle times compared to standard PC. This product is available in a wide range of opaque colors and is an excellent candidate for a wide range of electrical applications.

## TYPICAL PROPERTY VALUES

Revision 20200610

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	62	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	54	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D 638
Tensile Modulus, 50 mm/min	2500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	95	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2600	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	62	MPa	ISO 527
Tensile Stress, break, 50 mm/min	58	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2350	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	900	J/m	ASTM D 256
Izod Impact, notched, -30°C	150	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	72	J	ASTM D 3763
Izod Impact, notched 80*10*3 +23°C	60	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	15	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	134	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	114	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	128	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	119	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	134	°C	ISO 306
Vicat Softening Temp, Rate B/120	135	°C	ISO 306

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	125	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	115	°C	ISO 75/Ae
Relative Temp Index, Elec <sup>(1)</sup>	100	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(1)</sup>	100	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(1)</sup>	100	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 260°C/2.16 kgf	7	g/10 min	ASTM D 1238
Melt Flow Rate, 300°C/1.2 kgf	15	g/10 min	ASTM D 1238
Density	1.2	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/saturated)	0.3	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.1	%	ISO 62
Melt Volume Rate, MVR at 260°C/5.0 kg	18	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Dielectric Strength, in oil, 3.2 mm	26.5	kV/mm	ASTM D 149
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Comparative Tracking Index	250	V	IEC 60112
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥0.75	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥0.75	mm	UL 746A
<b>FLAME CHARACTERISTICS <sup>(1)</sup></b>			
UL Yellow Card Link	<a href="#">E45329-100058759</a>	-	-
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥1.7	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥0.75	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.7 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.75 mm	800	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.7 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75 mm	960	°C	IEC 60695-2-12
<b>INJECTION MOLDING</b>			
Drying Temperature	90 – 100	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Temperature	270 – 300	°C	
Nozzle Temperature	250 – 290	°C	
Front - Zone 3 Temperature	260 – 300	°C	
Middle - Zone 2 Temperature	250 – 290	°C	
Rear - Zone 1 Temperature	230 – 260	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	60 – 90	°C	

(1) 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.

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