LEXAN* Resin EXL4419

Asia Pacific: COMMERCIAL

LEXAN EXL4419 polycarbonate (PC) siloxane copolymer resin is a 9% Glass Fiber (GF) reinforced opaque injection molding (IM) grade. This medium flow resin offers much higher ductility, improved release characteristics and excellent processability with opportunities for shorter IM cycle times when compared to GF reinforced standard PC resins. LEXAN EXL4419 resin is available in opaque colors only and is an excellent candidate for a broad range of applications that require a combination of stiffness and ductility.

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	53	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	44	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4.5	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	20	%	ASTM D 638
Tensile Modulus, 5 mm/min	3300	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	3200	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	55	MPa	ISO 527
Tensile Stress, break, 5 mm/min	43	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4.5	%	ISO 527
Tensile Strain, break, 5 mm/min	12.5	%	ISO 527
Tensile Modulus, 1 mm/min	3300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	3300	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	280	J/m	ASTM D 256
Izod Impact, notched, -30°C	110	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	40	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	25	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	10	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	25	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU

1) Typical values only. Variations within normal tolerances are possible for various colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, except the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
4) Own measurement according to UL.
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 Update:06/19/2014

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TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
THERMAL			
Vicat Softening Temp, Rate B/50	145	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	135	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.07E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.94E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	4.07E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.94E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASS	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	144	°C	ISO 306
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	134	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.25	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.2 - 0.6	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	11	g/10 min	ASTM D 1238
Density	1.25	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.12	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.46	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	10	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.78E+17	Ohm-cm	ASTM D 257
Surface Resistivity	2.86E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	31.5	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	3.04	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0086	-	ASTM D 150

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TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
ELECTRICAL			
Dielectric Constant, 1.9 GHz	2.95	-	SABIC Method
Dissipation Factor, 1.9 GHz	0.0057	-	SABIC Method

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	310 - 330	°C
Nozzle Temperature	305 - 325	°C
Front - Zone 3 Temperature	310 - 330	°C
Middle - Zone 2 Temperature	300 - 320	°C
Rear - Zone 1 Temperature	290 - 310	°C
Mold Temperature	80 - 115	°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

• NOTE: Back Pressure, Screw Speed, Shot to Cylinder Size and Vent Depth are only mentioned as general guidelines. These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

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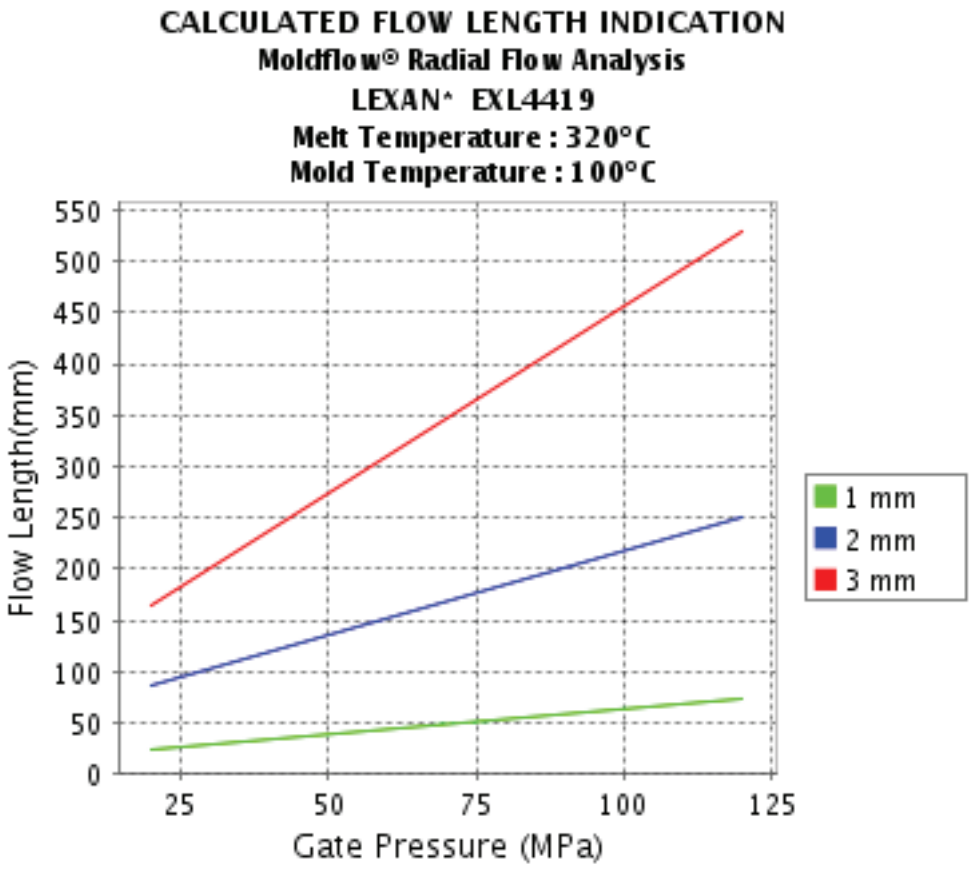

Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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