SABIC Innovative Plastics™

Lexan* Resin EXL4419

Americas: 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.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
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	Value	Unit	Standard
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
THERMAL	Value	Unit	Standard
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	Value	Unit	Standard
Specific Gravity	1.25	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	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	Value	Unit	Standard
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

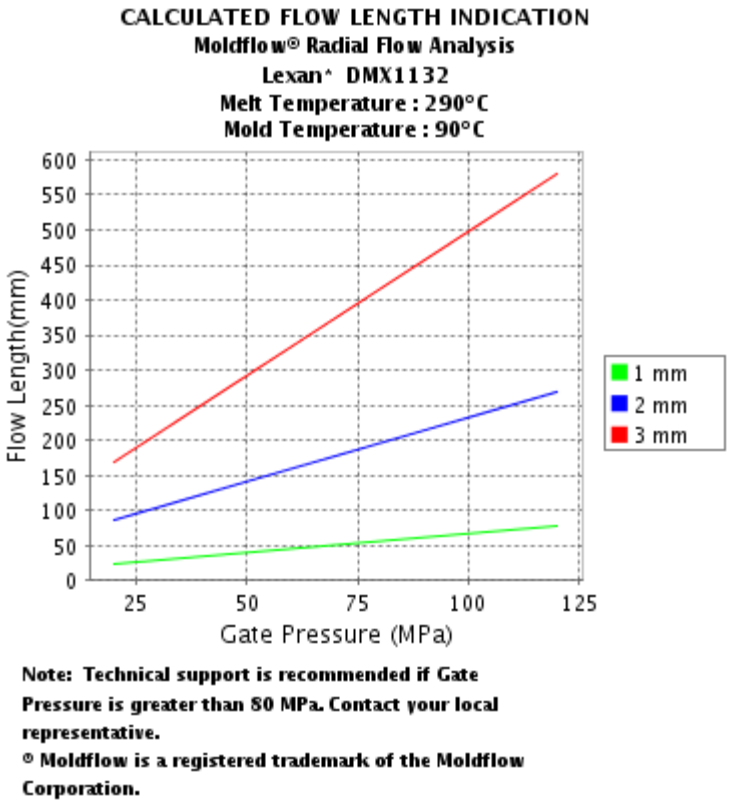
Source GMD, last updated:02/01/2005

Processing

Parameter Injection Molding	Value	Unit
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

Source GMD, last updated:02/01/2005

• 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.



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

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PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. 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) Internal measurements according to UL standards.

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