LEXAN™ EXL4419 resin

Monday, March 09, 2015

General Information

Product Description

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.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific		
Filler / Reinforcement	• Glass Fiber, 9.0% Filler by Weight		
Features	• Copolymer • Ductile • Fast Molding Cycle	• Good Mold Release • Good Processability • Good Stiffness	• Medium Flow
Appearance	• Opaque		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.25		ASTM D792
Density	1.25	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	11	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	0.629	in³/10min	ISO 1133
Molding Shrinkage - Flow (0.126 in)	2.0E-3 to 6.0E-3	in/in	Internal Method
Water Absorption (Saturation, 73°F)	0.12	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.46	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [2]	479000	psi	ASTM D638
Tensile Modulus	479000	psi	ISO 527-2/1
Tensile Strength [3] (Yield)	7690	psi	ASTM D638
Tensile Stress (Yield)	7980	psi	ISO 527-2/5
Tensile Strength [3] (Break)	6380	psi	ASTM D638
Tensile Stress (Break)	6240	psi	ISO 527-2/5
Tensile Elongation [3] (Yield)	4.5	%	ASTM D638
Tensile Strain (Yield)	4.5	%	ISO 527-2/5
Tensile Elongation [3] (Break)	20	%	ASTM D638
Tensile Strain (Break)	13	%	ISO 527-2/5
Flexural Modulus [4] (1.97 in Span)	464000	psi	ASTM D790
Flexural Modulus [5]	479000	psi	ISO 178

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Mechanical	Nominal Value	Unit	Test Method
Flexural Stress [5, 6]	13100	psi	ISO 178
Flexural Strength [4] (Yield, 1.97 in Span)	13800	psi	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [7]			ISO 179/1eA
-22°F	7.1	ft·lb/in²	
73°F	12	ft·lb/in²	
Charpy Unnotched Impact Strength [7]			ISO 179/1eU
-22°F	No Break		
73°F	No Break		
Notched Izod Impact			ASTM D256
-22°F	2.1	ft·lb/in	
73°F	5.2	ft·lb/in	
Notched Izod Impact Strength [8]			ISO 180/1A
-22°F	4.8	ft·lb/in²	
73°F	12	ft·lb/in²	
Unnotched Izod Impact Strength [8]			ISO 180/1U
-22°F	No Break		
73°F	No Break		
Instrumented Dart Impact (73°F, Total Energy)	354	in·lb	ASTM D3763
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed, 0.126 in	275	°F	
Heat Deflection Temperature [9]			ISO 75-2/Af
264 psi, Unannealed, 2.52 in Span	273	°F	
Vicat Softening Temperature	293	°F	ASTM D1525 [10]
Vicat Softening Temperature			
--	291	°F	ISO 306/B50
--	295	°F	ISO 306/B120
Ball Pressure Test (167°F)	Pass		IEC 60695-10-2
CLTE - Flow (-40 to 104°F)	2.3E-5	in/in/°F	ASTM E831
CLTE - Flow (-40 to 104°F)	2.3E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (-40 to 104°F)	3.9E-5	in/in/°F	ASTM E831
CLTE - Transverse (-40 to 104°F)	3.9E-5	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	2.9E+17	ohm	ASTM D257
Volume Resistivity	1.8E+17	ohm·cm	ASTM D257
Dielectric Strength (0.0630 in, in Oil)	800	V/mil	ASTM D149
Dielectric Constant			
1 MHz	3.04		ASTM D150
1.90 GHz	2.95		Internal Method
Dissipation Factor			
1 MHz	8.6E-3		ASTM D150
1.90 GHz	5.8E-3		Internal Method

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Processing Information

Injection	Nominal Value	Unit
Drying Temperature	250	°F
Drying Time	3.0 to 4.0	hr
Drying Time, Maximum	48	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 to 60	%
Rear Temperature	550 to 590	°F
Middle Temperature	570 to 610	°F
Front Temperature	590 to 630	°F
Nozzle Temperature	579 to 621	°F
Processing (Melt) Temp	590 to 630	°F
Mold Temperature	180 to 241	°F
Back Pressure	50.0 to 100	psi
Screw Speed	40 to 70	rpm
Vent Depth	1.0E-3 to 3.0E-3	in

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 0.20 in/min

[3] Type I, 0.20 in/min

[4] 0.051 in/min

[5] 0.079 in/min

[6] Yield

[7] 80*10*3 sp=62mm

[8] 80*10*3

[9] 80*10*4 mm

[10] Rate B (120°C/h), Loading 2 (50 N)