LEXAN™ COPOLYMER EXL9414P

DESCRIPTION

LEXAN EXL9414P polycarbonate (PC) siloxane copolymer resin is a medium flow, non-chlorinated, non-brominated flame retardant opaque injection molding (IM) grade. This resin offers low temperature ductility, thin wall flame retardant capability, and in combination with excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL9414P copolymer resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications, especially the housing of fast-charging mobile phones.

TYPICAL PROPERTY VALUES

Revision 20260416

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.3	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	89	%	ASTM D638
Tensile Modulus, 50 mm/min	2117	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	90	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2200	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.9	%	ISO 527
Tensile Strain, break, 50 mm/min	63	%	ISO 527
Tensile Modulus, 1 mm/min	2109	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2184	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	962	J/m	ASTM D256
Izod Impact, notched, -30°C	670	J/m	ASTM D256
Izod Impact, notched 80*10*3 +23°C	77	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	51	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	81	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	48	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	123	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D648
CTE, -40°C to 40°C, flow	7.71E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.34E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	9.11E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.54E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	137	°C	ISO 306
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	111	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	124	°C	ISO 75/Bf
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow [3]	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow [3]	0.4 – 0.8	%	SABIC method
Melt Flow Rate			
300°C/1.2 kgf	13.5	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Melt Volume Rate			
300°C/1.2 kg	12	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Dielectric Constant			
1.1 GHz	2.87	-	SABIC method
1.9 GHz	2.82	-	SABIC method
5 GHz	2.82	-	SABIC method
10 GHz	2.83	-	SABIC method
Dissipation Factor			
1.1 GHz	0.006	-	SABIC method
1.9 GHz	0.006	-	SABIC method
5 GHz	0.006	-	SABIC method
10 GHz	0.006	-	SABIC method
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-104263177	-	-
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
UL Recognized, 94V-0 Flame Class Rating	0.8	mm	UL 94
INJECTION MOLDING [4]			
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	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) 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.,The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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