LEXAN™ COPOLYMER EXL9414

REGION ASIA

DESCRIPTION

LEXAN EXL9414 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 EXL9414 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 20200309

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	56	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	62	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	107	%	ASTM D 638
Tensile Modulus, 50 mm/min	2110	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	88	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2190	MPa	ASTM D 790
Hardness, Rockwell L	83	-	ASTM D 785
Hardness, Rockwell R	117	-	ASTM D 785
Tensile Stress, yield, 50 mm/min	57	MPa	ISO 527
Tensile Stress, break, 50 mm/min	60	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.6	%	ISO 527
Tensile Strain, break, 50 mm/min	106	%	ISO 527
Tensile Modulus, 1 mm/min	2140	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2180	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	880	J/m	ASTM D 256
Izod Impact, notched, -30°C	660	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	67	J	ASTM D 3763
Izod Impact, notched 80*10*3 +23°C	69	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	46	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	75	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	29	kJ/m²	ISO 179/1eA
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	134	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	118	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.91E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.27E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7.42E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.64E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	136	°C	ISO 306

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	131	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	117	°C	ISO 75/Ae
Relative Temp Index, Elec [1]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	80	°C	UL 746B
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	11.5	g/10 min	ASTM D 1238
Density	1.19	g/cm³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg	10	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+16	Ohm	ASTM D 257
Dielectric Constant (Dk), 1.1 GHz	2.78	-	ASTM ES 7-83
Dissipation Factor (Df), 1.1 GHz	0.006	-	ASTM ES 7-83
Dielectric Strength, in oil, 3.2 mm	13	kV/mm	ASTM D 149
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-102896543	-	-
UL Recognized, 94-5VA Flame Class Rating	≥3.1	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥1	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥0.8	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥0.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at [2]	1	mm	IEC 60695-2-12
Oxygen Index (LOI)	39	%	ISO 4589
INJECTION MOLDING			
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) 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.

(2) Value shown here is based on internal measurement.

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