

LEXAN™ COPOLYMER EXL9414

REGION EUROPE

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 20170913

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, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m ²	ISO 180/1U

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 +23°C	69	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	46	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	75	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	29	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	131	°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
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	136	°C	ISO 306
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
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (5)	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/cm ³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg	10	cm ³ /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
FLAME CHARACTERISTICS			
UL Recognized, 94V-2 Flame Class Rating (3)	0.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating (3)	0.8	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.2	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3.1	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	

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