



LEXANTM COPOLYMER EXL1414

REGION AMERICAS

DESCRIPTION

LEXAN EXL1414 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade. This resin offers extreme low temperature (-40 °C) ductility in combination with excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1414 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications.

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors, Automotive Under the Hood, Automotive Exteriors
Building and Construction	Outdoor, Lawn and Landscape, Water Management, Construction
Consumer	Ophthalmics, Sport/Leisure, Personal Accessory, Home Appliances, Personal Recreation, Commercial Appliance
Electrical and Electronics	Electrical Devices and Displays, Lighting, Electrical Components and Infrastructure
Healthcare	Surgical, Healthcare, Patient Testing, Medical Facility Infrastructure
Industrial	Defense
Mass Transportation	Specialty Vehicles

TYPICAL PROPERTY VALUES

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	98	%	ASTM D 638
Tensile Modulus, 50 mm/min	2020	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	92	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2230	MPa	ASTM D 790
Hardness, Rockwell L	89	-	ASTM D 785
Hardness, Rockwell R	121	-	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	6	%	ISO 527
Tensile Strain, break, 50 mm/min	120	%	ISO 527
Tensile Modulus, 1 mm/min	2150	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	85	MPa	ISO 178
Flexural Modulus, 2 mm/min	2250	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	865	J/m	ASTM D 256
Izod Impact, notched, -30°C	774	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	70	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
Izod Impact, notched 80*10*3 +23°C	70	kJ/m ²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 -30°C	60	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	65	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			
Vicat Softening Temp, Rate B/50	145	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	139	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	124	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.0E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.47E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.2E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	145	°C	ISO 306
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	140	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	128	°C	ISO 75/Ae
Relative Temp Index, Elec ⁽¹⁾	130	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽¹⁾	120	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽¹⁾	130	°C	UL 746B
PHYSICAL			
Specific Gravity	1.18	-	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	10	g/10 min	ASTM D 1238
Density	1.19	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
Dielectric Strength, in oil, 0.8 mm	16.2	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	2.68	-	ASTM D 150
Relative Permittivity, 1 MHz	2.64	-	ASTM D 150
Dissipation Factor, 100 Hz	0.0012	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0093	-	ASTM D 150
Hot-Wire Ignition (HWI), PLC 0	≥0.7	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥0.7	mm	UL 746A
FLAME CHARACTERISTICS ⁽¹⁾			
UL Yellow Card Link	E121562-100079869	-	-
UL Yellow Card Link 2	E121562-575795	-	-
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	875	°C	IEC 60695-2-13

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Ignitability Temperature, 1.5 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.8 mm	875	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.8 mm	850	°C	IEC 60695-2-12
UV-light, water exposure/immersion	F1	-	UL 746C
Oxygen Index (LOI)	35.0	%	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.

DISCLAIMER

TBD