

# LNPT<sup>™</sup> ELCREST<sup>™</sup> EXL9334

## DESCRIPTION

LNP ELCREST EXL9334 is based on Polycarbonate (PC) siloxane copolymer resin. It is a UV stabilized, medium flow opaque material suitable for injection molding (IM) and sheet extrusion applications. This grade offers UL94 V0 @ 1.5mm flame retardancy based on non-bromine, non-chlorine FR systems, extreme low temperature ductility (-40°C) characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. It is available in a wide range of opaque colors and is targeted for a wide range of applications.

GENERAL INFORMATION	
Features	Flame Retardant, High Flow, Non Cl/Br flame retardant, Non halogenated flame retardant, Impact resistant, Low temperature impact, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Sheet extrusion, Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Aerospace, Recreational/Specialty Vehicles
Building and Construction	Building Component
Consumer	Ophthalmics, Home Decoration, Home Appliances
Electrical and Electronics	Energy Management, Mobile Phone - Computer - Tablets, Lighting
Industrial	Electrical, Material Handling
Mass Transportation	Rail

## TYPICAL PROPERTY VALUES

Revision 20241028

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	59	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	115	%	ASTM D638
Tensile Modulus, 5 mm/min	2100	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	89	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2050	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	108	%	ISO 527
Tensile Modulus, 1 mm/min	2000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	87	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D4812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, 23°C	750	J/m	ASTM D256
Izod Impact, notched, -30°C	725	J/m	ASTM D256
Izod Impact, notched, -40°C	685	J/m	ASTM D256
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	65	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL <sup>(1)</sup></b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	140	°C	ASTM D648
Vicat Softening Temp, Rate B/50	140	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	123	°C	ASTM D648
CTE, -40°C to 40°C, flow	6.1E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.2E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	6.1E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	6.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	139	°C	ISO 306
Vicat Softening Temp, Rate B/120	141	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
Relative Temp Index, Elec <sup>(2)</sup>	125	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(2)</sup>	110	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(2)</sup>	120	°C	UL 746B
<b>PHYSICAL <sup>(1)</sup></b>			
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow <sup>(3)</sup>	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow <sup>(3)</sup>	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D1238
Density	1.19	g/cm <sup>3</sup>	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Water Absorption, (23°C/saturated)	0.4	%	ISO 62-1
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL <sup>(1)</sup></b>			
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 0	3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	0.75	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	0.75	mm	UL 746A
Volume Resistivity	1E16	Ω.cm	ASTM D257
<b>FLAME CHARACTERISTICS <sup>(2)</sup></b>			
UL Yellow Card Link	<a href="#">E207780-638263</a>	-	-
UL Yellow Card Link 2	<a href="#">E207780-638266</a>	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
Glow Wire Ignitability Temperature, 1.5 mm	825	°C	IEC 60695-2-13

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
<b>INJECTION MOLDING</b> <sup>(4)</sup> <sup>(5)</sup>			
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.
- (4) NOTE: Back Pressure, Screw Speed, Shot to Cylinder Size and Vent Depth are only mentioned as general guidelines. These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.
- (5) 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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