

LNPT[™] ELCREST[™] EXL9034

DESCRIPTION

LNP ELCRES EXL9034 is based on Polycarbonate (PC) siloxane copolymer resin with excellent low temperature ductility, robust flame retardancy (V0/5VA), good processability and electrical tracking resistance. It is UV stabilized with F1 rating and is a good candidate for applications like photovoltaic connectors.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Impact resistant, Low temperature impact, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	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 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yld, Type I, 50 mm/min	56	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	60	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	70	%	ASTM D638
Tensile Modulus, 50 mm/min	2090	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	87	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2020	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	59	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	68	%	ISO 527
Tensile Modulus, 1 mm/min	2065	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	84	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	700	J/m	ASTM D256
Izod Impact, notched, -30°C	660	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D4812
Instrumented Dart Impact Total Energy, 23°C	66	J	ASTM D3763
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	62	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	52	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	66	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	55	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 ⁽¹⁾			
Vicat Softening Temp, Rate B/50	147	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	122	°C	ASTM D648
Vicat Softening Temp, Rate B/50	145	°C	ISO 306
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
CTE, -40°C to 40°C, flow	7.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.8E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	7.8E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.9E-05	1/°C	ISO 11359-2
Relative Temp Index, Elec ⁽²⁾	130	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽²⁾	115	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽²⁾	130	°C	UL 746B
PHYSICAL ⁽¹⁾			
Specific Gravity	1.22	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm ⁽³⁾	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm ⁽³⁾	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	7	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	6	cm ³ /10 min	ISO 1133
ELECTRICAL ⁽¹⁾			
Comparative Tracking Index ⁽⁴⁾	600	V	IEC 60112
Hot-Wire Ignition (HWI), PLC 2	≥0.8	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥0.8	mm	UL 746A
FLAME CHARACTERISTICS ⁽²⁾			
UL Yellow Card Link	E207780-103437942	-	-
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥2.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.8	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING ⁽⁵⁾			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	275 – 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) Value shown here is based on internal measurement.
- (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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