LNP™ ELCRES™ NPEXL9834

DESCRIPTION

LNP ELCRES NPEXL9834 polycarbonate (PC) siloxane copolymer resin is a UV stabilized, high flow, non-chlorinated, non-brominated flame retardant opaque grade. This resin offers excellent low temperature ductility (-40 °C), UL94 V0 at 1.0mm, good chemical resistance and in combination with excellent processability and mold release with opportunities for shorter cycle times compared to standard PC. ELCRES NPEXL9834 resin is a product available in wide range of opaque colors and excellent candidate for a wide variety of applications.

GENERAL INFORMATION	
Features	Chemical Resistance, Good Processability, Non Cl/Br flame retardant, Low temperature impact, No PFAS intentionally added (PCR contains <50ppm total organic fluorine content)
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Personal Accessory, Home Appliances
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure

TYPICAL PROPERTY VALUES

Revision 20260908

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	58	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	4.5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D638
Tensile Modulus, 50 mm/min	2250	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	87	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2260	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	48	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.6	%	ISO 527
Tensile Strain, break, 50 mm/min	80	%	ISO 527
Tensile Modulus, 1 mm/min	2210	MPa	ISO 527
Flexural Strength, 2 mm/min	85	MPa	ISO 178
Flexural Modulus, 2 mm/min	2270	MPa	ISO 178
Hardness, Rockwell L	118	-	ASTM D785
Hardness, Rockwell R	86	-	ASTM D785
IMPACT [1]			
Izod Impact, notched, 23°C	830	J/m	ASTM D256
Izod Impact, notched, -30°C	660	J/m	ASTM D256
Izod Impact, notched, -40°C	610	J/m	ASTM D256
Izod Impact, notched 80*10*3 +23°C	69	kJ/m²	ISO 180/1A

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Izod Impact, notched 80*10*3 -30°C	49	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	71	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	55	kJ/m²	ISO 179/1eA
Instrumented Dart Impact Total Energy, 23°C	59	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	60	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	115	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	103	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	114	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	103	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	7.0E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.6E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	9.0E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.7E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	120	°C	ISO 306
Vicat Softening Temp, Rate B/120	121	°C	ISO 306
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.20	-	ASTM D792
Density	1.20	g/cm³	ISO 1183
Melt Flow Rate			
300°C/1.2 kgf	25	g/10 min	ASTM D1238
Melt Volume Rate			
300°C/1.2 kg	23	cm³/10 min	ISO 1133
Mold Shrinkage, flow, 3.2 mm [3]	0.5 – 0.9	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [3]	0.5 – 0.9	%	SABIC method
ELECTRICAL [1]			
Surface Resistivity	>1E+16	Ω	ASTM D257
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Dielectric Constant			
1.1 GHz	2.93	-	SABIC method
1.9 GHz	2.87	-	SABIC method
5 GHz	2.88	-	SABIC method
10 GHz	2.89	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0063	-	SABIC method
1.9 GHz	0.0063	-	SABIC method
5 GHz	0.0064	-	SABIC method
10 GHz	0.0064	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link [2]	E207780-104695651	-	-
UL Recognized, 94V-0 Flame Class Rating [2]	≥1.0	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1.0	mm	IEC 60695-2-12

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Ignitability Temperature, 1.0 mm	875	°C	IEC 60695-2-13
INJECTION MOLDING [4]			
Drying Temperature	110	°C	
Drying Time	3 – 4	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	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) 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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