LNP™ ELCRES™ CXL1434

DESCRIPTION

LNP ELCRES CXL1434 is an UV stabilized, amorphous Polycarbonate (PC) copolymer resin that offers medium flow, high ductility in combination with excellent chemical resistance. This grade is available for custom coloring and is intended for a wide variety of applications that need improved chemical resistance.

GENERAL INFORMATION	
Features	Chemical Resistance, Impact resistant, Low temperature impact, Weatherable/UV stable, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Consumer Goods, Sport/Leisure, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Industrial General

TYPICAL PROPERTY VALUES

Revision 20240619

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	52	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	100	%	ASTM D638
Tensile Modulus, 50 mm/min	1900	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	88	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2050	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	50	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	100	%	ISO 527
Tensile Modulus, 1 mm/min	1850	MPa	ISO 527
Flexural Strength, 2 mm/min	83	MPa	ISO 178
Flexural Modulus, 2 mm/min	2062	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	813	J/m	ASTM D256
Izod Impact, notched, -30°C	728	J/m	ASTM D256
Izod Impact, notched, -60°C	718	J/m	ASTM D256
Izod Impact, notched, -70°C	670	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched, -70°C	NB	J/m	ASTM D4812
Izod Impact, notched 80*10*3 +23°C	55	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -70°C	35	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -70°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	65	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -70°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C (2)	63	J	ASTM D3763
Instrumented Dart Impact Ductility, 23°C (2)	100	%	ASTM D3763
THERMAL (1)			
HDT, 0.45 MPa, 3.2 mm, unannealed	137	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	124	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	136	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	122	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	7.00E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.00E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	7.00E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.00E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	141	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	143	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
PHYSICAL (1)			
Specific Gravity	1.2	-	ASTM D792
Density	1.19	g/cm³	ISO 1183
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	9.5	cm³/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
Water Absorption, (23°C/24hrs)	0.3	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.08	%	ISO 62-4
Mold Shrinkage, flow (3)	0.4 – 0.9	%	SABIC method
Mold Shrinkage, xflow (3)	0.4 – 0.9	%	SABIC method
ELECTRICAL (1)			
Dielectric Constant			
100 MHz	2.82	-	SABIC method
2.47 GHz	2.78	-	SABIC method
Dissipation Factor			
100 MHz	0.0066	-	SABIC method
2.47 GHz	0.0053	-	SABIC method
Surface Resistivity	>1.E+13	Ω	ASTM D257
Volume Resistivity	>1.E+15	Ω.cm	ASTM D257
FLAME CHARACTERISTICS (4)			
UL Yellow Card Link	E121562-104691246	-	-
UL Yellow Card Link 2	E207780-104691235	-	-

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link 3	E45329-104691234	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	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)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 340	°C	
Rear - Zone 1 Temperature	270 – 320	°C	
Middle - Zone 2 Temperature	280 – 330	°C	
Front - Zone 3 Temperature	290 – 340	°C	
Nozzle Temperature	290 – 340	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 80	%	
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) at 3.3 m/s dart speed
(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) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors.
(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.

DISCLAIMER