LNP™ ELCRES™ XD2131

DESCRIPTION

ELCRES XD2131 is a polycarbonate (PC) copolymer resin with excellent low temperature (-40C) ductility in combination with excellent processability and shorter injection molding cycle time compared to standard PC. ELCRES XD2131 resin is a product available in wide range of opaque colors and an excellent candidate for a wide variety of applications such as consumer electronics (CE) and adjacent applications.

GENERAL INFORMATION	
Applications	Electronic Components, Electronics, Enclosure/Housing/Cover, Wireless Communications, Wiring Devices
Features	Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Ophthalmics, Sport/Leisure, Personal Accessory, Home Appliances, Personal Recreation, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets, Lighting
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260203

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	92	%	ASTM D638
Tensile Modulus, 50 mm/min	2010	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	91	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2220	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	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	118	%	ISO 527
Tensile Modulus, 1 mm/min	2150	MPa	ISO 527
Flexural Strength, 2 mm/min	85	MPa	ISO 178
Flexural Modulus, 2 mm/min	2240	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	850	J/m	ASTM D256
Izod Impact, notched, -30°C	750	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	69	J	ASTM D3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m²	ISO 180/1U

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Izod Impact, notched 80*10*3 +23°C	69	kJ/m²	ISO 180/1A
THERMAL [1]			
Vicat Softening Temp, Rate B/50	143	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	123	°C	ASTM D648
CTE, -40°C to 40°C, flow	6.96E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.47E-05	1/°C	ASTM E831
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
Relative Temp Index, Elec [2]	130	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	120	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	130	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.18	-	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	10	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.15	%	ISO 62-4
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Hot-Wire Ignition (HWI), PLC 0 [2]	0.7	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1 [2]	0.7	mm	UL 746A
Volume Resistivity [1]	>1.0E15	Ω.cm	ASTM D257
Surface Resistivity [1]	>1.0E15	Ω	ASTM D257
Dielectric Strength, in oil, 0.8 mm [1]	16.2	kV/mm	ASTM D149
Relative Permittivity, 100 Hz [1]	2.68	-	ASTM D150
Relative Permittivity, 1 MHz [1]	2.64	-	ASTM D150
Dissipation Factor, 100 Hz [1]	0.0012	-	ASTM D150
Dissipation Factor, 1 MHz [1]	0.0093	-	ASTM D150
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-639862	-	-
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
Glow Wire Ignitability Temperature, 1.5 mm	875	°C	IEC 60695-2-13
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
INJECTION MOLDING [4]			
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	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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) 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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