LNP™ ELCRES™ XD2131CR

DESCRIPTION

LNP ELCRES XD2131CR polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade. This resin offers extreme low temperature (-40 °C) ductility in combination with excellent chemical resistance compared to standard PC. ELCRES XD2131CR resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications that need improved chemical resistance.

GENERAL INFORMATION	
Features	Chemical Resistance, Impact resistant, Low temperature impact, 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 20261106

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	54	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	85	%	ASTM D638
Tensile Modulus, 50 mm/min	2160	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	2170	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	90	%	ISO 527
Tensile Modulus, 1 mm/min	2130	MPa	ISO 527
Flexural Strength, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2170	MPa	ISO 178
Hardness, Rockwell L	83	-	ASTM D785
Hardness, Rockwell R	117	-	ASTM D785
IMPACT [1]			
Izod impact, notched			
23°C	820	J/m	ASTM D256
-30°C	730	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
-40°C	710	J/m	ASTM D256
80*10*3 +23°C	66	kJ/m²	ISO 180/1A
80*10*3 -30°C	59	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	62	kJ/m²	ISO 179/1eA
Instrumented Dart Impact Total Energy, 23°C	69	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	68	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	136	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	121	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	134	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	120	°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	7.7E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
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	1.19	-	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			
300°C/1.2 kg	9	cm³/10 min	ISO 1133
Mold Shrinkage, flow [3]	0.5 – 0.9	%	SABIC method
Mold Shrinkage, xflow [3]	0.5 – 0.9	%	SABIC method
ELECTRICAL [1]			
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Dielectric Constant			
1.1 GHz	2.8	-	SABIC method
1.9 GHz	2.79	-	SABIC method
5 GHz	2.8	-	SABIC method
10 GHz	2.8	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0065	-	SABIC method
1.9 GHz	0.0061	-	SABIC method
5 GHz	0.0059	-	SABIC method
10 GHz	0.0058	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link [2]	E207780-10219688	-	-
UL Recognized, 94HB Flame Class Rating [2]	≥0.75	mm	UL 94

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
INJECTION MOLDING [4]			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	275 – 295	°C	
Nozzle Temperature	290 – 310	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	

(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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