LNP™ ELCRES™ XD2322

DESCRIPTION

ELCRES XD2322 polycarbonate (PC) copolymer resin is a UV stabilized opaque grade. This resin offers UL94 V0@1.5mm flame retardancy based on non-bromine, non-chlorine FR system, excellent low temperature ductility characteristics and processability. ELCRES XD2322 resin is an excellent candidate for a wide range of applications such as electronic vehicles (EV) and 5G devices.

GENERAL INFORMATION	
Applications	Electronic Components, Electronics, EV Infrastructure, Photovoltaic Components
Features	Flame Retardant, Non Cl/Br flame retardant, Impact resistant, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

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

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	58	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	112	%	ASTM D638
Tensile Modulus, 5 mm/min	2100	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	92	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2400	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	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	108	%	ISO 527
Tensile Modulus, 1 mm/min	2000	MPa	ISO 527
Flexural Strength, 2 mm/min	87	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	780	J/m	ASTM D256
Izod Impact, notched, -30°C	652	J/m	ASTM D256
Izod Impact, notched, -40°C	360	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Instrumented Dart Impact Total Energy, 23°C	66	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
Izod Impact, notched 80*10*3 +23°C	63	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	29	kJ/m²	ISO 180/1A
THERMAL [1]			
Relative Temp Index, Elec [2]	125	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	115	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	125	°C	UL 746B
Vicat Softening Temp, Rate B/50	140	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	123	°C	ASTM D648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	6.1E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.2E-05	1/°C	ASTM E831
PHYSICAL [1]			
Specific Gravity	1.19	-	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	16	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.4	%	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	15	cm³/10 min	ISO 1133
ELECTRICAL [2]			
Hot-Wire Ignition (HWI), PLC 2	3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	1.5	mm	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index, M	150	V	IEC 60112
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-639521	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
Glow Wire Ignitability Temperature, 1.5 mm	825	°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	
Front - Zone 3 Temperature	295 – 315	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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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