LNP™ ELCRIN™ EXL3439RCC

DESCRIPTION

ELCRIN EXL3439RCC is a glass fiber reinforced, high flow, flame retardant PC/siloxane copolymer resin with 30% post consumer recycle (PCR) content, offering excellent processability and improved release performance. It is UV stabilized, custom colourable resin with a UL94 V0 rating at 1.5mm and is based on non-chlorine, non-bromine FR agents. EXL3439RCC resin offers much improved impact strength and ductility over conventional GF reinforced PC resins. This product is an excellent candidate for a broad range of applications in Mobility, including EVSE and Electrical or Electronic enclosures among others. This resin is EN45545 R22 and R23 HL3 compliant and is targeted for train electro-technical interior and exterior applications.

GENERAL INFORMATION	
Features	Flame Retardant, Mechanical Recycling, Impact resistant
Fillers	Glass Fiber
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

TYPICAL PROPERTY VALUES

Revision 20261028

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	3500	MPa	ISO 527
Tensile Stress, yield, 5 mm/min	55	MPa	ISO 527
Tensile Stress, break, 5 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4.4	%	ISO 527
Tensile Strain, break, 5 mm/min	10	%	ISO 527
Flexural Modulus, 2 mm/min	3400	MPa	ISO 178
Flexural Strength, 2 mm/min	95	MPa	ISO 178
Tensile Modulus, 5 mm/min	3500	MPa	ASTM D638
Tensile Stress, yld, Type I, 5 mm/min	55	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	40	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	4.5	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	10	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	3500	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	95	MPa	ASTM D790
IMPACT [1]			
Izod Impact, Unnotched			
80*10*3 +23°C	150	kJ/m²	ISO 180/1U
80*10*3 0°C	145	kJ/m²	ISO 180/1U
80*10*3 -30°C	140	kJ/m²	ISO 180/1U
80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
80*10*4 0°C	NB	kJ/m²	ISO 180/1U
80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
23°C	1690	J/m	ASTM D256
0°C	1640	J/m	ASTM D256
-30°C	1620	J/m	ASTM D256
Charpy			
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	20	kJ/m²	ISO 179/1eA

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy 0°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	12	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	131	kJ/m²	ISO 179/1eU
Charpy 0°C, Unnotch Edgew 80*10*3 sp=62mm	129	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	125	kJ/m²	ISO 179/1eU
Izod impact, notched			
80*10*3 +23°C	20	kJ/m²	ISO 180/1A
80*10*3 0°C	15	kJ/m²	ISO 180/1A
80*10*3 -30°C	10	kJ/m²	ISO 180/1A
80*10*4 +23°C	18	kJ/m²	ISO 180/1A
80*10*4 0°C	12	kJ/m²	ISO 180/1A
80*10*4 -30°C	10	kJ/m²	ISO 180/1A
23°C	200	J/m	ASTM D256
0°C	125	J/m	ASTM D256
-30°C	100	J/m	ASTM D256
Multi-Axial Instrumented Impact Total Energy, 23°C	45	J	ISO 6603-2
Multi-Axial Instrumented Impact Total Energy, -30°C	15	J	ISO 6603-2
Instrumented Dart Impact Total Energy, 23°C	35	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	10	J	ASTM D3763
THERMAL [1]			
CTE, -40°C to 40°C, flow	4.50E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.70E-05	1/°C	ISO 11359-2
Relative Temp Index, Elec [2]	130	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	115	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	130	°C	UL 746B
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	120	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	132	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	135	°C	ISO 306
Vicat Softening Temp, Rate B/120	134	°C	ISO 306
Vicat Softening Temp, Rate A/50	141	°C	ISO 306
Vicat Softening Temp, Rate A/120	142	°C	ISO 306
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
CTE, -40°C to 40°C, flow	4.50E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.70E-05	1/°C	ASTM E831
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	130	°C	ASTM D648
Vicat Softening Temp, Rate B/50	135	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	134	°C	ASTM D1525
Vicat Softening Temp, Rate A/50	141	°C	ASTM D1525
Vicat Softening Temp, Rate A/120	142	°C	ASTM D1525
PHYSICAL [1]			
Density	1.25	g/cm³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg	12	cm³/10 min	ISO 1133
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.08	%	ISO 62-4
Water Absorption, (23°C/saturated)	0.21	%	ISO 62-1

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Shrinkage, flow	0.5 – 0.7	%	SABIC method
Mold Shrinkage, xflow	0.5 – 0.7	%	SABIC method
Specific Gravity	1.25	-	ASTM D792
Melt Flow Rate, 300°C/1.2 kgf	12	g/10 min	ASTM D1238
Water Absorption, (23°C/24hrs)	0.15	%	ASTM D570
Moisture Absorption, (23°C/50% RH/24 hrs)	0.07	%	ASTM D570
ELECTRICAL [1]			
Hot-Wire Ignition (HWI), PLC 0	≥1.2	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.2	mm	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E45329-104662714	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.2	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3.0	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Ignitability Temperature, 1.2 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.5 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	825	°C	IEC 60695-2-13
Glow Wire Flammability Index, 1.2 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING [3]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	270 – 330	°C	
Rear - Zone 1 Temperature	250 – 310	°C	
Middle - Zone 2 Temperature	260 – 320	°C	
Front - Zone 3 Temperature	270 – 330	°C	
Nozzle Temperature	265 – 325	°C	
Mold Temperature	80 – 115	°C	
Back Pressure	0.3 – 0.7	MPa	
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) 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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