LNP™ ELCRIN™ EXL1454RCC

DESCRIPTION

ELCRIN EXL1454RCC polycarbonate (PC) siloxane copolymer resin is a UV stabilized, medium flow opaque injection molding (IM) grade with 50% post consumer recycle (PCR) content. This resin offers extreme low temperature (-40 C) ductility, good chemical resistance in combination with excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. ELCRIN EXL1454RCC resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications.

GENERAL INFORMATION	
Features	Chemical Resistance, Good Processability, Mechanical Recycling, Impact resistant, Low temperature impact, No PFAS intentionally added (PCR contains <50ppm total organic fluorine content)
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Recreational/Specialty Vehicles
Building and Construction	Building Component
Consumer	Personal Accessory, Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260408

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	59	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D638
Tensile Modulus, 50 mm/min	2110	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	89	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2190	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	59	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.5	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2100	MPa	ISO 527
Flexural Strength, 2 mm/min	85	MPa	ISO 178
Flexural Modulus, 2 mm/min	2130	MPa	ISO 178
Hardness, Rockwell L	83	-	ASTM D785
Hardness, Rockwell R	117	-	ASTM D785
IMPACT [1]			
Izod Impact, notched, 23°C	870	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, 0°C	800	J/m	ASTM D256
Izod Impact, notched, -30°C	740	J/m	ASTM D256
Izod Impact, notched, -40°C	730	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	67	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	67	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	68	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	53	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	65	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	135	°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	135	°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	7.1E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.5E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	7.8E-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	141	°C	ISO 306
PHYSICAL [1]			
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [2]	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [2]	0.4 – 0.8	%	SABIC method
Melt Flow Rate			
300°C/1.2 kgf	11	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Melt Volume Rate			
300°C/1.2 kg	10	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Surface Resistivity	>1E+16	Ω	ASTM D257
Dielectric Constant			
1.1 GHz	2.84	-	SABIC method
1.9 GHz	2.82	-	SABIC method
5 GHz	2.81	-	SABIC method
10 GHz	2.87	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0063	-	SABIC method
1.9 GHz	0.0059	-	SABIC method
5 GHz	0.0056	-	SABIC method
10 GHz	0.006	-	SABIC method
FLAME CHARACTERISTICS [3]			
Oxygen Index (LOI)	33	%	ISO 4589
UL Yellow Card Link	E207780-104533299	-	-

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
Glow Wire Ignitability Temperature, 1.0 mm	875	°C	IEC 60695-2-13
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	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	275 – 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) 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.

(3) 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.

(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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