LNP™ ELCRIN™ EXL9454RCC

DESCRIPTION

ELCRIN EXL9454RCC polycarbonate (PC) siloxane copolymer resin is a UV stabilized, medium flow, non-chlorinated, non-brominated flame retardant opaque grade with 50% post consumer recycle (PCR) content. This resin offers excellent low temperature ductility (-40 °C), UL94 V0 at 1.5mm, good chemical resistance and in combination with excellent processability and release with opportunities for shorter cycle times compared to standard PC. ELCRIN EXL9454RCC resin is a product available in limited colors and excellent candidate for a wide variety of applications.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Good Processability, Sustainable (Mechanical Recycling), Non Cl/Br flame retardant, Low temperature impact
Fillers	Unreinforced
Brands	LNP™ ELCRIN™
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Personal Accessory, Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	61	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.4	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D638
Tensile Modulus, 50 mm/min	2110	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	86	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2160	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.4	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2160	MPa	ISO 527
Flexural Strength, 2 mm/min	84	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
Hardness, Rockwell L	78	-	ASTM D785
Hardness, Rockwell R	114	-	ASTM D785
IMPACT [1]			
Izod Impact, notched, 23°C	840	J/m	ASTM D256
Izod Impact, notched, 0°C	770	J/m	ASTM D256

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, -30°C	670	J/m	ASTM D256
Izod Impact, notched, -40°C	620	J/m	ASTM D256
Izod Impact, notched 80*10*3 +23°C	66	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	56	kJ/m²	ISO 180/1A
Instrumented Dart Impact Total Energy, 23°C	57	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	58	J	ASTM D3763
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	53	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	134	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	133	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	119	°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	7.6E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	8.0E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.0E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	139	°C	ISO 306
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
PHYSICAL [1]			
Specific Gravity	1.18	-	ASTM D792
Density	1.18	g/cm³	ISO 1183
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
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
ELECTRICAL [1]			
Surface Resistivity	>1E+15	Ω	ASTM D257
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Dielectric Constant, 1.1 GHz	2.91	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0066	-	SABIC method
Dielectric Constant, 1.9 GHz	2.87	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0065	-	SABIC method
Dielectric Constant, 5 GHz	2.86	-	SABIC method
Dissipation Factor, 5 GHz	0.0063	-	SABIC method
Dielectric Constant, 10 GHz	2.84	-	SABIC method
Dissipation Factor, 10 GHz	0.0065	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link [3]	E207780-104563868	-	-
UL Recognized, 94V-0 Flame Class Rating [3]	≥1.5	mm	UL 94
Oxygen Index (LOI)	32	%	ISO 4589
Glow Wire Flammability Index 960°C, passes at	1.0	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
INJECTION MOLDING [4]			
Drying Temperature	120	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	

(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.

DISCLAIMER