LNP™ ELCRIN™ EXL7253RCC

DESCRIPTION

ELCRIN EXL7253RCC 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 (-20~-30 °C), ultra-thin wall flame retardant capability with UL94 V0 at 0.6mm, and in combination with excellent processability and release with opportunities for shorter cycle times compared to standard PC. ELCRIN EXL7253RCC resin is a product available in wide range of opaque colors and excellent candidate for a wide variety of applications.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Sustainable (Mechanical Recycling), Low temperature impact, Weatherable/UV stable
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 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	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D638
Tensile Modulus, 50 mm/min	2310	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	2240	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	57	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2260	MPa	ISO 527
Flexural Strength, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2170	MPa	ISO 178
Hardness, Rockwell L	87	-	ASTM D785
Hardness, Rockwell R	119	-	ASTM D785
IMPACT [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, 23°C	980	J/m	ASTM D256
Izod Impact, notched, 0°C	860	J/m	ASTM D256
Izod Impact, notched, -20°C	760	J/m	ASTM D256
Izod Impact, notched, -30°C	600	J/m	ASTM D256
Izod Impact, notched, -40°C	200	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	60	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	64	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	72	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	20	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	80	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	18	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	117	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	106	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	116	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	105	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	6.4E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.7E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	8.8E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	123	°C	ISO 306
Vicat Softening Temp, Rate B/120	124	°C	ISO 306
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.20	-	ASTM D792
Density	1.20	g/cm³	ISO 1183
Melt Flow Rate, 300°C/1.2 kgf	12	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	11	cm³/10 min	ISO 1133
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
ELECTRICAL [1]			
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Surface Resistivity	>1E+16	Ω	ASTM D257
Dielectric Constant, 1.1 GHz	2.91	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0067	-	SABIC method
Dielectric Constant, 1.9 GHz	2.9	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0064	-	SABIC method
Dielectric Constant, 5 GHz	2.86	-	SABIC method
Dissipation Factor, 5 GHz	0.0063	-	SABIC method
Dielectric Constant, 10 GHz	2.91	-	SABIC method
Dissipation Factor, 10 GHz	0.0065	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link [2]	E207780-104604398	-	-

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94-5VA Flame Class Rating [2]	≥3.0	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating [2]	≥0.6	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
Oxygen Index (LOI)	46	%	ISO 4589
INJECTION MOLDING [4]			
Drying Temperature	110	°C	
Drying Time	3 – 4	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) 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.

DISCLAIMER

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