LNP™ ELCRIN™ EXL8281TCC

DESCRIPTION

ELCRIN EXL8281TCC polycarbonate (PC) siloxane copolymer resin is a transparent injection molding grade with 75% post consumer recycle (PCR) content. This resin offers excellent low temperature (-10~-20 °C) ductility in combination with medium flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. ELCRIN EXL8281TCC resin is a general purpose product available in transparent and opaque colors and is an excellent candidate for a broad range of applications.

GENERAL INFORMATION	
Features	Good Processability, IR Transparent, Mechanical Recycling, Transparent/Translucent, 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 20260930

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	61	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	65	MPa	ASTM D638
Tensile Strain, Yield			
Type I, 50 mm/min	6	%	ASTM D638
50 mm/min	6	%	ISO 527
Tensile Strain, Break			
Type I, 50 mm/min	110	%	ASTM D638
50 mm/min	90	%	ISO 527
Tensile Modulus, 50 mm/min	2370	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	98	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2270	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	61	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	MPa	ISO 527
Tensile Modulus, 1 mm/min	2390	MPa	ISO 527
Flexural Strength, 2 mm/min	94	MPa	ISO 178
Flexural Modulus, 2 mm/min	2230	MPa	ISO 178
Hardness, Rockwell L	92	-	ASTM D785
Hardness, Rockwell R	122	-	ASTM D785

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
IMPACT [1]			
Izod impact, notched			
23°C	940	J/m	ASTM D256
0°C	890	J/m	ASTM D256
-10°C	800	J/m	ASTM D256
-20°C	250	J/m	ASTM D256
80*10*3 +23°C	73	kJ/m²	ISO 180/1A
80*10*3 -30°C	21	kJ/m²	ISO 180/1A
Instrumented Dart Impact Total Energy, 23°C	77	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	74	J	ASTM D3763
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	76	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	19	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	136	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	123	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	136	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	123	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	5.9E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.2E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	7.3E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°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	1.19	-	ASTM D792
Density	1.19	g/cm³	ISO 1183
Melt Flow Rate			
300°C/1.2 kgf	14	g/10 min	ASTM D1238
Melt Volume Rate			
300°C/1.2 kg	13	cm³/10 min	ISO 1133
Mold Shrinkage, flow, 3.2 mm [3]	0.4 – 0.9	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [3]	0.4 – 0.9	%	SABIC method
OPTICAL [1]			
Light Transmission, 2.54 mm	85	%	ASTM D1003
Haze, 2.54 mm	2.3	%	ASTM D1003
ELECTRICAL [1]			
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Surface Resistivity	>1E+16	Ω	ASTM D257
Dielectric Constant			
1.1 GHz	2.87	-	SABIC method
1.9 GHz	2.79	-	SABIC method
5 GHz	2.79	-	SABIC method

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
10 GHz	2.86	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0064	-	SABIC method
1.9 GHz	0.0058	-	SABIC method
5 GHz	0.0052	-	SABIC method
10 GHz	0.0052	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link [2]	E207780-104607508	-	-
UL Recognized, 94HB Flame Class Rating [2]	≥0.4	mm	UL 94
Glow Wire Flammability Index 850°C, passes at	1	mm	IEC 60695-2-12
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	

(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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