LNP™ ELCRES™ EXL1212L

DESCRIPTION

ELCRES EXL1212L polycarbonate (PC) siloxane copolymer resin is a medium to high flow opaque injection molding (IM) grade. This resin offers good low temperature -20°C ductility and weld line appearance in combination with excellent processability with opportunities for shorter IM cycle times compared to standard PC. ELCRES EXL1212L resin is a product available in wide range of opaque colors and specifically designed for chemical plating process.

GENERAL INFORMATION	
Features	Good Processability, Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
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 20261012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	53	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	90	%	ASTM D638
Tensile Modulus, 50 mm/min	2040	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	84	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2090	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	53	MPa	ISO 527
Tensile Stress, break, 50 mm/min	54	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	90	%	ISO 527
Tensile Modulus, 1 mm/min	2080	MPa	ISO 527
Flexural Strength, 2 mm/min	82	MPa	ISO 178
Flexural Modulus, 2 mm/min	2050	MPa	ISO 178
Hardness, Rockwell L	82	-	ASTM D785
Hardness, Rockwell R	118	-	ASTM D785
IMPACT [1]			
Izod impact, notched			
23°C	580	J/m	ASTM D256
0°C	520	J/m	ASTM D256
-20°C	450	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
-30°C	430	J/m	ASTM D256
-40°C	320	J/m	ASTM D256
80*10*3 +23°C	49	kJ/m²	ISO 180/1A
80*10*3 -30°C	38	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	50	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	38	kJ/m²	ISO 179/1eA
Instrumented Dart Impact Total Energy, 23°C	62	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	63	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	135	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	122	°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	121	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	6.5E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.6E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	7.4E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.0E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°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	15	g/10 min	ASTM D1238
Melt Volume Rate			
300°C/1.2 kg	14	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+16	Ω	ASTM D257
Volume Resistivity	>1E+16	Ω.cm	ASTM D257
Dielectric Constant			
1.1 GHz	2.83	-	SABIC method
1.9 GHz	2.9	-	SABIC method
5 GHz	2.77	-	SABIC method
10 GHz	2.83	-	SABIC method
Dissipation Factor			
1.1 GHz	0.006	-	SABIC method
1.9 GHz	0.0058	-	SABIC method
5 GHz	0.0046	-	SABIC method
10 GHz	0.0049	-	SABIC method
FLAME CHARACTERISTICS [3]			
UL Yellow Card Link	E207780-104561280	-	-
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
Oxygen Index (LOI)	29	%	ISO 4589

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
INJECTION MOLDING [4]			
Drying Temperature	120	°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	
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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