LNP™ ELCRIN™ EXL1213TB

DESCRIPTION

ELCRIN EXL1213TB polycarbonate (PC) siloxane copolymer is transparent injection molding grade with major component synthesized from Bio source. This grade offers extreme low temperature ductility in combination with high flow characteristics, excellent processability and good chemical resistance. It 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	Chemical Resistance, Good Processability, Amorphous, Bio-Renewable, Aesthetics/Visual effects, Transparent/Translucent, High temperature resistance, Impact resistant, Low temperature impact, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Recreational Vehicle
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure

TYPICAL PROPERTY VALUES

Revision 20260303

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	56	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	53	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.8	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	90	%	ASTM D638
Tensile Modulus, 50 mm/min	2060	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	91	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2080	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	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	80	%	ISO 527
Tensile Modulus, 1 mm/min	2076	MPa	ISO 527
Flexural Strength, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	1950	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	830	J/m	ASTM D256
Izod Impact, notched, -30°C	620	J/m	ASTM D256
Izod Impact, notched 80*10*3 +23°C	53	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	19	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	132	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	133	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	53	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	21	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	94	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	95	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C	68	J	ASTM D3763
THERMAL [1]			
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D648
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	121	°C	ISO 75/Ae
CTE, -40°C to 40°C, flow	8.4E-5	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9E-5	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	9.7E-5	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.2E-5	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	147	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	141	°C	ISO 306
Ball Pressure Test, 125°C +/- 2°C	Pass	-	IEC 60695-10-2
PHYSICAL [1]			
Specific Gravity	1.18	-	ASTM D792
Density	1.18	g/cm³	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Flow Rate, 300°C/1.2 kgf	14.7	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	13.3	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
OPTICAL [1]			
Light Transmission at 2.0 mm	89	%	SABIC method
Haze, 2mm	1.0	%	SABIC method
FLAME CHARACTERISTICS [3]			
UL Yellow Card Link	E207780-104423784	-	-
UL Recognized, 94HB Flame Class Rating	≥0.70	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 320	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 320	°C	
Middle - Zone 2 Temperature	285 – 305	°C	
Rear - Zone 1 Temperature	280 – 295	°C	
Mold Temperature	80 – 115	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	

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(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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