LNP™ ELCRES™ EXL1418TAML

DESCRIPTION

LNP ELCRES EXL1418TAML is a polycarbonate (PC) siloxane copolymer containing antimicrobial additives, medium flow, transparent and injection molding (IM) grade, available in transparent or tinted colors. This resin offers room temperature ductility in combination with excellent processability and release with opportunities for shorter IM cycle times compared with standard PC.

GENERAL INFORMATION	
Features	IR Transparent, Transparent/Translucent, Impact resistant, Low temperature impact
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Under the Hood, Aerospace, Recreational/Specialty Vehicles
Building and Construction	Building Component
Consumer	Personal Accessory, Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets, Lighting
Hygiene and Healthcare	General Healthcare
Industrial	Electrical, Defense

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	57	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	104	%	ASTM D638
Tensile Modulus, 50 mm/min	2070	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	2080	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	54	MPa	ISO 527
Tensile Stress, break, 50 mm/min	51	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.6	%	ISO 527
Tensile Strain, break, 50 mm/min	85.6	%	ISO 527
Tensile Modulus, 1 mm/min	2039	MPa	ISO 527
Flexural Strength, 2 mm/min	75	MPa	ISO 178
Flexural Modulus, 2 mm/min	2170	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	530	J/m	ASTM D256
Izod Impact, notched, -30°C	138	J/m	ASTM D256
Izod Impact, notched 80*10*3 +23°C	41	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 -30°C	14	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	38	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	13	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C	70	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	118	°C	ISO 75/Ae
CTE, -40°C to 40°C, flow	6.7E-5	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.0E-5	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	6.7E-5	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.0E-5	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	143	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	143	°C	ISO 306
Vicat Softening Temp, Rate B/120	143	°C	ISO 306
Ball Pressure Test, 125°C +/- 2°C	Passes	-	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)	0.09	%	ISO 62
Water Absorption, (23°C/saturated)	0.12	%	ISO 62-1
Melt Flow Rate, 300°C/1.2 kgf	9	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	8.7	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, 2.54 mm	89.8	%	ASTM D1003
Haze, 2.54 mm	11	%	ASTM D1003
INJECTION MOLDING [3]			
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	270 – 295	°C	
Mold Temperature	70 – 95	°C	

(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) 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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