

LNPT[™] ELCREST[™] EXL1414AML

DESCRIPTION

ELCREST EXL1414AML is a polycarbonate (PC) siloxane copolymer resin containing antimicrobial additives, medium flow, opaque and injection molding (IM) grade. This resin offers extreme low temperature (-40 degrees) ductility in combination with excellent processability and release with opportunities for shorter IM cycle times compared with standard PC.

GENERAL INFORMATION

Features	Impact resistant, Low temperature impact, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY

Automotive
Building and Construction
Consumer
Electrical and Electronics
Hygiene and Healthcare
Industrial

SUB INDUSTRY

Automotive Interiors, Automotive Under the Hood, Automotive Exteriors, Recreational/Specialty Vehicles
Building Component, Water Management
Ophthalmics, Sport/Leisure, Personal Accessory, Home Appliances, Personal Recreation, Commercial Appliance
Mobile Phone - Computer - Tablets, Lighting
Surgical devices, General Healthcare, Patient Testing
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	64	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	115	%	ASTM D638
Tensile Modulus, 50 mm/min	2085	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	86	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2100	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	53	MPa	ISO 527
Tensile Stress, break, 50 mm/min	64	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	119	%	ISO 527
Tensile Modulus, 1 mm/min	2066	MPa	ISO 527
Flexural Strength, 2 mm/min	73	MPa	ISO 178
Flexural Modulus, 2 mm/min	2223	MPa	ISO 178
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	890	J/m	ASTM D256
Izod Impact, notched, -30°C	700	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	70	J	ASTM D3763

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 +23°C	70	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	52	kJ/m ²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m ²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	72	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	49	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL ⁽¹⁾			
HDT, 0.45 MPa, 3.2 mm, unannealed	139	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	125	°C	ASTM D648
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	140	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	128	°C	ISO 75/Ae
CTE, -40°C to 40°C, flow	7.0E-5	1 / °C	ASTM E831
CTE, -40°C to 40°C, xflow	7.47E-5	1 / °C	ASTM E831
CTE, 23°C to 80°C, flow	7.2E-5	1 / °C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.2E-5	1 / °C	ISO 11359-2
Vicat Softening Temp, Rate B/50	140	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	139	°C	ISO 306
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
PHYSICAL ⁽¹⁾			
Specific Gravity	1.19	-	ASTM D792
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
Melt Flow Rate, 300°C/ 1.2 kgf	11	g/ 10 min	ASTM D1238
Density	1.19	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/ 1.2 kg	10	cm ³ / 10 min	ISO 1133
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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ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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