LNP™ ELCRES™ CRX1414

DESCRIPTION

LNP ELCRES CRX1414 is an amorphous Polycarbonate (PC) copolymer resin that offers medium flow, high ductility in combination with excellent chemical resistance. This grade is available for custom coloring and may be an excellent candidate for a wide variety of applications that need improved chemical resistance. This grade has passed the limited biocompatibility tests of ISO 10993-5 and ISO 10993-10.

GENERAL INFORMATION	
Features	Chemical Resistance, Healthcare/Formula lock, Impact resistant, Low temperature impact, No PFAS intentionally added
Fillers	Unreinforced
Brands	LNP™ ELCRES™
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Hygiene and Healthcare	Personal and Professional Hygiene, Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing

TYPICAL PROPERTY VALUES

Revision 20241024

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	63	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	>100	%	ASTM D638
Tensile Modulus, 50 mm/min	2020	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2170	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	90	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	52	MPa	ISO 527
Tensile Stress, break, 50 mm/min	61	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	>100	%	ISO 527
Tensile Modulus, 1 mm/min	1900	MPa	ISO 527
Flexural Strength, 2 mm/min	83	MPa	ISO 178
Flexural Modulus, 2 mm/min	2062	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	875	J/m	ASTM D256
Izod Impact, notched, -30°C	777	J/m	ASTM D256
Izod Impact, notched, -60°C	727	J/m	ASTM D256
Izod Impact, notched, -70°C	657	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -70°C	NB	J/m	ASTM D4812

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Instrumented Dart Impact Ductility, 23°C [2]	100	%	ASTM D3763
Instrumented Dart Impact Total Energy, 23°C [2]	62	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	63	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -70°C	40	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 -70°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -70°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 1.82 MPa, 3.2mm, unannealed	125	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
Vicat Softening Temp, Rate B/50	143	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	146	°C	ASTM D1525
CTE, -40°C to 40°C, flow	7E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7E-05	1/°C	ASTM E831
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	123	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	136	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	142	°C	ISO 306
Vicat Softening Temp, Rate B/120	144	°C	ISO 306
CTE, -40°C to 40°C, flow	7E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7E-05	1/°C	ISO 11359-2
Relative Temp Index, Elec [3]	130	°C	UL 746B
Relative Temp Index, Mech w/impact [3]	120	°C	UL 746B
Relative Temp Index, Mech w/o impact [3]	130	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.2	-	ASTM D792
Melt Volume Rate, MVR at 300°C/1.2 kg	9.5	cm³/10 min	ASTM D1238
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.07	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.2	%	ISO 62-1
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
Mold Shrinkage, flow [4]	0.4 – 0.9	%	SABIC method
Mold Shrinkage, xflow [4]	0.4 – 0.9	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant			
100 MHz	2.82	-	SABIC method
2.47 GHz	2.78	-	SABIC method
Dissipation Factor			
100 MHz	0.0066	-	SABIC method
2.47 GHz	0.0053	-	SABIC method
Surface Resistivity	>1.E+13	Ω	ASTM D257
Volume Resistivity	>1.E+15	Ω.cm	ASTM D257
Dielectric Strength, in oil, 1.6 mm	28.5	kV/mm	ASTM D149

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
FLAME CHARACTERISTICS [3]			
UL Yellow Card Link	E207780-104510209	-	-
UL Recognized, 94HB Flame Class Rating	≥0.75	mm	UL 94
INJECTION MOLDING [5]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 340	°C	
Rear - Zone 1 Temperature	270 – 320	°C	
Middle - Zone 2 Temperature	280 – 330	°C	
Front - Zone 3 Temperature	290 – 340	°C	
Nozzle Temperature	290 – 340	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 80	%	
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) at 3.3 m/s dart speed
(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) 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.
(5) 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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