LNP™ ELCRES™ CRX1414U

DESCRIPTION

LNP ELCRES CRX1414U is an UV stabilized, 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.

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

INDUSTRY	SUB INDUSTRY
Consumer	Consumer Goods, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Electronic Components, Mobile Phone - Computer - Tablets
Hygiene and Healthcare	Personal and Professional Hygiene, Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	52	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	59	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	1900	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2050	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span [2]	88	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	50	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	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	1850	MPa	ISO 527
Flexural Strength, 2 mm/min [2]	83	MPa	ISO 178
Flexural Modulus, 2 mm/min	2062	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	813	J/m	ASTM D256
Izod Impact, notched, -30°C	728	J/m	ASTM D256
Izod Impact, notched, -60°C	718	J/m	ASTM D256
Izod Impact, notched, -70°C	670	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched, -70°C	NB	J/m	ASTM D4812
Instrumented Dart Impact Ductility, 23°C [3]	100	%	ASTM D3763
Instrumented Dart Impact Total Energy, 23°C [3]	63	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	55	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -70°C	35	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	65	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	124	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	137	°C	ASTM D648
Vicat Softening Temp, Rate B/50	141	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	143	°C	ASTM D1525
CTE, -40°C to 40°C, flow	7.00E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.00E-05	1/°C	ASTM E831
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	122	°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	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
CTE, -40°C to 40°C, flow	7.00E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.00E-05	1/°C	ISO 11359-2
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)	0.08	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.3	%	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			
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
FLAME CHARACTERISTICS [5]			
UL Yellow Card Link	E121562-104548089	-	-
UL Recognized, 94HB Flame Class Rating [5]	≥0.75	mm	UL 94

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
INJECTION MOLDING [6]			
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) Stress at yield
(3) at 3.3 m/s dart speed
(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) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors.
(6) 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.

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.

DISCLAIMER