LNP™ ELCRES™ CRX9411

DESCRIPTION

LNP ELCRES CRX9411 is an amorphous Polycarbonate (PC) copolymer resin that offers medium flow, UL V0 rating @ 1.6 mm for all colors, and high ductility in combination with excellent chemical resistance. This grade is available for custom coloring and is intended for a wide variety of healthcare applications that need improved chemical resistance.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Impact resistant, Low temperature impact
Fillers	Unreinforced
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 20240503

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	1920	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2000	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span [2]	85	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	1858	MPa	ISO 527
Flexural Strength, 2 mm/min [2]	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2012	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	765	J/m	ASTM D256
Izod Impact, notched, -30°C	680	J/m	ASTM D256
Izod Impact, notched, -60°C	609	J/m	ASTM D256
Izod Impact, notched, -70°C	570	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
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]	61	J	ASTM D3763

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	125	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
Vicat Softening Temp, Rate B/50	142	°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
Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
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	137	°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
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 [1]			
Comparative Tracking Index (UL) {PLC} [5]	3	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 0 [5]	≥0.8	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0 [5]	≥0.8	mm	UL 746A
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	E121562-104302666	-	-

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94V-0 Flame Class Rating [5]	≥1.6	mm	UL 94
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. For details, please see the UL Yellow Card.
(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.

DISCLAIMER