

# LNPT<sup>™</sup> ELCREST<sup>™</sup> CRX9016E

## DESCRIPTION

LNP ELCRES CRX9016E is an unfilled, opaque, amorphous Polycarbonate (PC) copolymer resin suitable for extrusion. This non-chlorinated/brominated flame-retardant grade has an UL-94 V0 rating at 1.5 mm in black. It offers excellent low temperature ductility (-60°C) and is UV stabilized providing additional weathering capability. The grade has improved chemical resistance against a range of chemicals and is intended for a variety of mobility and industrial applications that need durability against chemicals.

GENERAL INFORMATION	
Features	Chemical Resistance, Non Cl/Br flame retardant, Enhanced mold release, Impact resistant, Low temperature impact, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Extrusion, Compression molding

  

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Consumer Goods, Sport/Leisure, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Industrial General

## TYPICAL PROPERTY VALUES

Revision 20240619

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Modulus, 1 mm/min	2100	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	53	MPa	ISO 527
Tensile Stress, break, 50 mm/min	62	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	>100	%	ISO 527
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
Flexural Strength, 2 mm/min	80	MPa	ISO 178
Tensile Modulus, 50 mm/min	2100	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	57	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	66	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
Flexural Modulus, 1.3 mm/min, 50 mm span	2150	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	85	MPa	ASTM D790
<b>IMPACT <sup>(1)</sup></b>			
<b>Izod Impact</b>			
Izod Impact, notched 80*10*4 +23°C	80	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	70	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -60°C	40	kJ/m <sup>2</sup>	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	80	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	60	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -60°C	40	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched, 23°C	890	J/m	ASTM D256
Izod Impact, notched, -30°C	800	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D4812
<b>Charpy</b>			
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	70	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	60	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>Instrumented Dart Impact Total Energy, 23°C</b>	70	J	ASTM D3763
<b>Instrumented Dart Impact Total Energy, -30°C</b>	70	J	ASTM D3763
<b>THERMAL <sup>(1)</sup></b>			
<b>HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm</b>	125	°C	ISO 75/Af
<b>HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm</b>	138	°C	ISO 75/Bf
<b>Vicat Softening Temp, Rate B/50</b>	145	°C	ISO 306
<b>Vicat Softening Temp, Rate B/120</b>	145	°C	ISO 306
<b>Vicat Softening Temp, Rate A/50</b>	153	°C	ISO 306
<b>Vicat Softening Temp, Rate A/120</b>	153	°C	ISO 306
<b>Ball Pressure Test, 125°C +/- 2°C</b>	PASSES	-	IEC 60695-10-2
<b>CTE, 23°C to 50°C, flow</b>	7.5E-05	1/°C	ISO 11359-2
<b>CTE, 23°C to 50°C, xflow</b>	9.0E-05	1/°C	ISO 11359-2
<b>HDT, 1.82 MPa, 3.2mm, unannealed</b>	125	°C	ASTM D648
<b>HDT, 0.45 MPa, 3.2 mm, unannealed</b>	138	°C	ASTM D648
<b>Vicat Softening Temp, Rate B/50</b>	145	°C	ASTM D1525
<b>Vicat Softening Temp, Rate B/120</b>	145	°C	ASTM D1525
<b>Vicat Softening Temp, Rate A/50</b>	153	°C	ASTM D1525
<b>Vicat Softening Temp, Rate A/120</b>	153	°C	ASTM D1525
<b>CTE, 23°C to 50°C, flow</b>	7.5E-05	1/°C	ASTM E831
<b>CTE, 23°C to 50°C, xflow</b>	9.0E-05	1/°C	ASTM E831
<b>Relative Temp Index, Elec</b>	125	°C	UL 746B
<b>Relative Temp Index, Mech w/impact</b>	115	°C	UL 746B
<b>Relative Temp Index, Mech w/o impact</b>	125	°C	UL 746B
<b>PHYSICAL <sup>(1)</sup></b>			
<b>Density</b>	1.18	g/cm <sup>3</sup>	ISO 1183
<b>Moisture Absorption, (23°C/50% RH/Equilibrium)</b>	0.15	%	ISO 62-4
<b>Water Absorption, (23°C/saturated)</b>	0.40	%	ISO 62-1
<b>Melt Volume Rate, MVR at 300°C/2.16 kg</b>	4	cm <sup>3</sup> /10 min	ISO 1133
<b>Melt Volume Rate, MVR at 300°C/5.0 kg</b>	10	cm <sup>3</sup> /10 min	ISO 1133

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Volume Rate, MVR at 330°C/2.16kg	9	cm <sup>3</sup> /10 min	ISO 1133
Mold Shrinkage, xflow <sup>(2)</sup>	0.5 – 0.9	%	SABIC method
Mold Shrinkage, flow <sup>(2)</sup>	0.5 – 0.9	%	SABIC method
Specific Gravity	1.18	-	ASTM D792
Moisture Absorption, (23°C/50% RH/24 hrs)	0.10	%	ASTM D570
Water Absorption, (23°C/24hrs)	0.15	%	ASTM D570
Melt Flow Rate, 300°C/2.16 kgf	4	g/10 min	ASTM D1238
<b>ELECTRICAL <sup>(3)</sup></b>			
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.5	mm	UL 746A
<b>FLAME CHARACTERISTICS <sup>(3)</sup></b>			
UL Yellow Card Link	<u>E45329-104610596</u>	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3.0	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.5 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	850	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
<b>PROFILE EXTRUSION <sup>(4)</sup></b>			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	18	Hrs	
Maximum Moisture Content	0.05	%	
Water Bath Temperature	60 – 80	°C	
Melt Temperature	240 – 280	°C	
Hopper Temperature	50 – 70	°C	
Adapter Temperature	240 – 280	°C	
Barrel - Zone 1 Temperature	240 – 280	°C	
Barrel - Zone 2 Temperature	240 – 280	°C	
Barrel - Zone 3 Temperature	240 – 280	°C	
Barrel - Zone 4 Temperature	240 – 280	°C	
Calibrator 2 Temperature	60 – 90	°C	
Calibrator Temperature	60 – 90	°C	
Die Temperature	230 – 260	°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) 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) Extrusion parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations.



## DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.