LNP™ ELCRES™ CX7410

DESCRIPTION

LNP ELCRES CX7410 Polycarbonate (PC)/Acrylonitrile Butadiene Styrene (ABS)/PC siloxane copolymer (PC/ABS/EXL) blend is an injection moldable, medium flow, non chlorinated/brominated flame retardant grade. The product is available in a wide range of opaque colors and has a UL94 V0 at 1.5mm and 5VB at 2mm flame rating. This grade has improved chemical resistance, ductility and heat properties compared to standard PC/ABS blends.

GENERAL INFORMATION	
Applications	Battery Pack, Battery System
Features	Good Processability, Heat Stabilized, High Flow, UV-C resistant, Non Cl/Br flame retardant, Enhanced mold release, Impact resistant, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate + Acrylonitrile Butadiene Styrene + PC siloxane copolymer (PC+ABS+EXL)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Hydrocarbon and Energy	Energy Storage

TYPICAL PROPERTY VALUES

Revision 20250225

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	2500	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	53	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.6	%	ISO 527
Tensile Nominal Strain, break, 50 mm/min	40	%	ISO 527
Flexural Modulus, 2 mm/min	2600	MPa	ISO 178
Flexural Strength, 2 mm/min	98	MPa	ISO 178
Flexural Stress at 3.5% strain, 2 mm/min	81	MPa	ISO 178
Tensile Modulus, 50 mm/min	2550	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	65	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	4.6	%	ASTM D638
Tensile Nominal Strain, brk, Type I, 50 mm/min	60	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2600	MPa	ASTM D790
Flexural Stress, yld, 1.3 mm/min, 50 mm span	100	MPa	ASTM D790
Flexural Stress at 5% strain, 1.3 mm/min, 50 mm span	100	MPa	ASTM D790
IMPACT [1] [2]			
Izod Impact			
Izod Impact, notched 80*10*4 +23°C	45	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	17	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 +23°C	54	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 +10°C	30	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 0°C	16	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched, 23°C	700	J/m	ASTM D256
Izod Impact, notched, 10°C	600	J/m	ASTM D256
Izod Impact, notched, 0°C	140	J/m	ASTM D256
Izod Impact, notched, -30°C	120	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Charpy			
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	46	kJ/m²	ISO 179/1eA
Charpy 0°C, V-notch Edgew 80*10*4 sp=62mm	14	kJ/m²	ISO 179/1eA
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	65	kJ/m²	ISO 179/1eA
Charpy 10°C, V-notch Edgew 80*10*3 sp=62mm	52	kJ/m²	ISO 179/1eA
Charpy 0°C, V-notch Edgew 80*10*3 sp=62mm	18	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL [1]			
CTE			
CTE, -40°C to 80°C, flow	6.9E-05	1/°C	ISO 11359-2
CTE, -40°C to 80°C, xflow	7.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 80°C, flow	6.9E-05	1/°C	ASTM E831
CTE, -40°C to 80°C, xflow	7.1E-05	1/°C	ASTM E831
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	98	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	108	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	113	°C	ISO 306
Vicat Softening Temp, Rate B/120	114	°C	ISO 306
HDT, 1.82 MPa, 3.2mm, unannealed	95	°C	ASTM D648
Vicat Softening Temp, Rate B/50	113	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	114	°C	ASTM D1525
Ball Pressure Test, 75°C +/- 2°C	PASS	-	IEC 60695-10-2
Relative Temp Index, Elec	90	°C	UL 746B
Relative Temp Index, Mech w/impact	90	°C	UL 746B
Relative Temp Index, Mech w/o impact	90	°C	UL 746B
PHYSICAL [1] [3]			
Density	1.2	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.12	%	ISO 62-4
Water Absorption, (23°C/saturated)	0.24	%	ISO 62-1
Mold Shrinkage, flow	0.28	%	SABIC method
Mold Shrinkage, xflow	0.33	%	SABIC method
Melt Volume Rate, MVR at 260°C/2.16 kg	10	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 260°C/5.0 kg	29	cm³/10 min	ISO 1133
Specific Gravity	1.2	-	ASTM D792
Water Absorption, (23°C/Saturated)	0.24	%	ASTM D570
Water Absorption, (23°C/24hrs)	0.12	%	ASTM D570
Melt Flow Rate, 260°C/2.16 kgf	11	g/10 min	ASTM D1238

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
FLAME CHARACTERISTICS [4]			
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥2	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	960	°C	IEC 60695-2-13
UL Yellow Card Link	E45329-104592671	-	-
INJECTION MOLDING [5]			
Drying Temperature	85 – 95	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.04	%	
Hopper Temperature	40 – 60	°C	
Melt Temperature	265 – 290	°C	
Rear - Zone 1 Temperature	245 – 270	°C	
Middle - Zone 2 Temperature	255 – 280	°C	
Front - Zone 3 Temperature	265 – 290	°C	
Nozzle Temperature	265 – 290	°C	
Mold Temperature	65 – 85	°C	
Back Pressure	0.3 – 0.7	MPa	
Shot to Cylinder Size	30 – 80	%	
Vent Depth	0.038 – 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) Impact measured on natural color
(3) 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.
(4) 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.
(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.

DISCLAIMER