LNP™ ELCRES™ DMX6034

DESCRIPTION

ELCRES DMX6034 is an impact modified, improved scratch resistant polycarbonate copolymer. This medium flow, UV stabilized, custom colorable resin is an excellent candidate for wide variety of electronics, consumer, and industrial applications that require a balance of scratch resistance and ductility.

GENERAL INFORMATION	
Features	Scratch Resistance, Impact resistant, Weatherable/UV stable, No PFAS intentionally added
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yield, 50 mm/min	61	MPa	ISO 527
Tensile Stress, break, 50 mm/min	54	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	88	%	ISO 527
Tensile Modulus, 1 mm/min	2084	MPa	ISO 527
Flexural Modulus, 2 mm/min	2151	MPa	ISO 178
Flexural Stress, yield, 2 mm/min	91	MPa	ISO 178
Tensile Modulus, 50 mm/min	2268	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	65	%	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	52	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	62	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2130	MPa	ASTM D790
Flexural Stress, yld, 1.3 mm/min, 50 mm span	88	MPa	ASTM D790
Pencil Hardness test, 0.5 kgf	F	-	ASTM D3363
Hardness, Rockwell M	66	-	ASTM D785
IMPACT [1]			
Izod Impact, notched 80*10*3 +23°C	45	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	45	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	183	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	173	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	27	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m²	ISO 179/1eA

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	270	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	275	kJ/m²	ISO 179/1eU
Izod Impact, notched, 23°C	300	J/m	ASTM D256
Izod Impact, notched, 0°C	140	J/m	ASTM D256
Izod Impact, notched, -30°C	82	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	1730	J/m	ASTM D4812
Instrumented Dart Impact Total Energy, 23°C	66	J	ASTM D3763
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	113	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	129	°C	ISO 75/Bf
HDT, 1.82 MPa, 3.2mm, unannealed	114	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	129	°C	ASTM D648
Vicat Softening Temp, Rate B/50	134	°C	ISO 306
Vicat Softening Temp, Rate B/120	137	°C	ISO 306
Vicat Softening Temp, Rate B/50	134	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	136	°C	ASTM D1525
CTE, -40°C to 40°C, flow	7.2E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, flow	7.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.1E-05	1/°C	ASTM E831
PHYSICAL [1]			
Density	1.18	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24 hrs)	0.04	%	ASTM D570
Water Absorption, (23°C/24hrs)	0.08	%	ASTM D570
Specific Gravity	1.18	-	ASTM D792
Mold Shrinkage, flow, 24 hrs [2]	0.5 – 0.8	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [2]	0.5 – 0.8	%	ASTM D955
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ASTM D1238
INJECTION MOLDING [3]			
Drying Temperature	110	°C	
Drying Time	3 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 310	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Front - Zone 3 Temperature	290 – 310	°C	
Nozzle Temperature	290 – 310	°C	
Mold Temperature	60 – 85	°C	

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(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) 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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