LNP™ ELCRES™ DMX1233

DESCRIPTION

LNP ELCRES DMX1233 is a UV stabilized improved flow Polycarbonate (PC) copolymer resin. Available in both transparent and custom colours, this grade is a good candidate for 5G related devices, anti-scratch covers etc. Added features of this grade include: Improved Scratch Resistance and Improved Dielectric Performance (lower Df).

GENERAL INFORMATION	
Features	Good Processability, Dielectrics, Amorphous, IR Transparent, Scratch Resistance, Transparent/Translucent, Weatherable/UV stable, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Personal Accessory
Electrical and Electronics	Electronic Components
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20241024

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 50 mm/min	58.4	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	42.3	%	ASTM D638
Tensile Modulus, 50 mm/min	2505	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	108	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2340	MPa	ASTM D790
Tensile Stress, break, 50 mm/min	56.5	MPa	ISO 527
Tensile Strain, break, 50 mm/min	29.9	%	ISO 527
Tensile Modulus, 1 mm/min	2384	MPa	ISO 527
Flexural Strength, 2 mm/min	104	MPa	ISO 178
Flexural Modulus, 2 mm/min	2303	MPa	ISO 178
Pencil Hardness test, 1kgf	HB	-	ASTM D3363
IMPACT [1]			
Izod Impact, notched, 23°C	45	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	4.37	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	134	°C	ASTM D648

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 1.82 MPa, 3.2mm, unannealed	121	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	133	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	117	°C	ISO 75/Af
CTE			
-40°C to 80°C, flow	7.5E-5	1/°C	ISO 11359-2
-40°C to 80°C, xflow	8.1E-5	1/°C	ISO 11359-2
Vicat Softening Temp, Rate A/50	146	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	139	°C	ISO 306
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.1827	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.037	%	ASTM D570
Melt Flow Rate, 300°C/1.2 kgf	21	g/10 min	ASTM D1238
Mold Shrinkage, flow [3]	0.73	%	SABIC method
Mold Shrinkage, xflow [3]	0.72	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant, 1.1 GHz	2.76	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0037	-	SABIC method
Dielectric Constant, 1.9 GHz	2.77	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0035	-	SABIC method
Dielectric Constant, 5 GHz	2.77	-	SABIC method
Dissipation Factor, 5 GHz	0.0032	-	SABIC method
Dielectric Constant, 10 GHz	2.87	-	SABIC method
Dissipation Factor, 10 GHz	0.0033	-	SABIC method
Dielectric Constant, 20 GHz	2.73	-	SABIC method
Dissipation Factor, 20 GHz	0.0035	-	SABIC method
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-104568852	-	-
UL Recognized, 94HB Flame Class Rating	≥0.6	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Mold Temperature	70 – 95	°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) 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.

(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) 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