LEXAN™ FR RESIN DMX1214

DESCRIPTION

LEXAN DMX1214 is a standard flow Polycarbonate (PC) copolymer resin. Available in both transparent and custom colours, this grade is a good candidate for 5G related devices. Added features of this grade include: Improved Scratch Resistance and Improved Dielectric Performance (lower Df).

GENERAL INFORMATION	
Features	Good Processability, Dielectrics, IR Transparent, Scratch Resistance, Transparent/Translucent, 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 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	77	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	64	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	92	%	ASTM D638
Tensile Modulus, 50 mm/min	2830	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	116	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2630	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	77	MPa	ISO 527
Tensile Stress, break, 50 mm/min	62	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	8	%	ISO 527
Tensile Strain, break, 50 mm/min	60	%	ISO 527
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Flexural Strength, 2 mm/min	101	MPa	ISO 178
Flexural Modulus, 2 mm/min	2310	MPa	ISO 178
Pencil Hardness test, 1kgf	F	-	ASTM D3363
Erichson scratch depth, 6N	14	micrometer	SABIC method
IMPACT [1]			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, notched, 23°C	37	J/m	ASTM D256
Izod Impact, notched, -30°C	32	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	68	J	ASTM D3763

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	93	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	4	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	133	kJ/m²	ISO 179/1eU
THERMAL (1)			
Vicat Softening Temp, Rate B/50	138	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	133	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	121	°C	ASTM D648
CTE, -40°C to 95°C, flow	6.E-05	1/°C	ASTM E831
CTE, -40°C to 95°C, xflow	6.E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	6.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	6.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Pass	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	134	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	121	°C	ISO 75/Af
PHYSICAL (1)			
Specific Gravity	1.18	-	ASTM D792
Specific Volume	0.85	cm³/g	ASTM D792
Density	1.17	g/cm³	ASTM D792
Water Absorption, (23°C/24hrs)	0.1	%	ASTM D570
Water Absorption, (23°C/Saturated)	0.3	%	ASTM D570
Moisture Absorption, (50% RH, Equilibrium)	0.14	%	ASTM D570
Moisture Absorption, (23°C/50% RH/24 hrs)	0.05	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm (2)	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	17.1	g/10 min	ASTM D1238
Density	1.17	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.3	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.14	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	16	cm³/10 min	ISO 1133
OPTICAL (1)			
Light Transmission, 2.54 mm	88	%	ASTM D1003
Haze, 2.54 mm	<0.8	%	ASTM D1003
Refractive Index	1.584	-	ASTM D542
Refractive Index	1.584	-	ISO 489
FLAME CHARACTERISTICS (3)			
UL Yellow Card Link	E121562-613857	-	-
UL Yellow Card Link 2	E45329-100081386	-	-
UL Yellow Card Link 3	E207780-100081391	-	-
UL Recognized, 94HB Flame Class Rating	≥0.75	mm	UL 94

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
INJECTION MOLDING [4]			
Drying Temperature	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	
Hopper Temperature	60 – 80	°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) 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) 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.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

DISCLAIMER