

# LEXAN™ VISUALFX™ RESIN FXD121R

## DESCRIPTION

LEXAN FXD121R compound is based on Polycarbonate (PC) resin. Added features of this grade include Mold release, Transparent/Translucent and Low Viscosity grade for Light Diffusion Special Effects. Color package may affect performance.

GENERAL INFORMATION	
Features	Aesthetics/Visual effects, Transparent/Translucent, Enhanced mold release
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

  

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Home Decoration, Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets

## TYPICAL PROPERTY VALUES

Revision 20240117

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, yld, Type I, 50 mm/min	61	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	64	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6.2	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	125	%	ASTM D638
Tensile Modulus, 50 mm/min	2390	MPa	ASTM D638
Tensile Stress, yield, 50 mm/min	63	MPa	ISO 527
Tensile Stress, break, 50 mm/min	65	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yld, 1.3 mm/min, 50 mm span	93	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2370	MPa	ASTM D790
Flexural Strength, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
Ball Indentation Hardness, H358/30	95	MPa	ISO 2039-1
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, notched, 23°C	747	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	72	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	76	J	ASTM D3763
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	65	kJ/m²	ISO 179/1eA
Izod Impact, notched 80*10*3 +23°C	65	kJ/m²	ISO 180/1A
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	12	kJ/m²	ISO 179/1eA

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*3 -30°C	11	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
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
THERMAL <sup>(1)</sup>			
HDT, 0.45 MPa, 3.2 mm, unannealed	135	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	123	°C	ASTM D648
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	133	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	122	°C	ISO 75/Ae
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	141	°C	ISO 306
CTE, 23°C to 80°C, flow	7.0E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Relative Temp Index, Elec <sup>(2)</sup>	130	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(2)</sup>	130	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(2)</sup>	130	°C	UL 746B
PHYSICAL <sup>(1)</sup>			
Specific Gravity	1.19	-	ASTM D792
Water Absorption, (23°C/Saturated)	0.13	%	ASTM D570
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.15	%	ISO 62-4
Density	1.2	g/cm <sup>3</sup>	ISO 1183
Melt Volume Rate, MVR at 300°C/ 1.2 kg	21	cm <sup>3</sup> / 10 min	ISO 1133
Melt Flow Rate, 300°C/ 1.2 kgf	18.2	g/ 10 min	ASTM D1238
Mold Shrinkage, flow, 3.2 mm <sup>(3)</sup>	0.5 – 0.7	%	SABIC method
Mold Shrinkage on Tensile Bar, flow <sup>(3)</sup>	0.5 – 0.7	%	SABIC method
ELECTRICAL <sup>(2)</sup>			
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥1.14	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥1.14	mm	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
FLAME CHARACTERISTICS <sup>(2)</sup>			
UL Yellow Card Link	<a href="#">E121562-104490057</a>	-	-
UL Yellow Card Link 2	<a href="#">E207780-228420</a>	-	-
UL Yellow Card Link 3	<a href="#">E45329-104485843</a>	-	-
UL Recognized, 94HB Flame Class Rating	≥0.7	mm	UL 94
UV-light, water exposure/immersion	F2	-	UL 746C
INJECTION MOLDING <sup>(4)</sup>			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Maximum Moisture Content	0.02	%	
Melt Temperature	280 – 305	°C	
Nozzle Temperature	275 – 300	°C	
Front - Zone 3 Temperature	280 – 305	°C	
Middle - Zone 2 Temperature	270 – 295	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 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) 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.

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