LEXAN™ Copolymer EXL9330 - Americas

Polycarbonate

SABIC

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Technical Data

Product Description

EXL9330 is an opaque (PC)- siloxane copolymer resin that offers extreme low temperature (-60 C) ductility in combination with excellent processability. This UV stabilized, medium flow resin features UL f1/V-0/5VA rating with non-chlorinated, non-brominated flame retardant agents for wide range of colors. EXL9330 is an excellent candidate for a broad range of applications such as mobile phones, tablets, industrial housings, electric circuit protection, personal safety helmets, electric vehicle supply equipment (EVSE) housings and connectors.

General

Material Status	• Commercial: Active		
Literature [1]	• LNP™ EXL COPOLYMER RESINS FOR HEALTHCARE • SABIC Material Solutions for Home Appliances • SABIC solution for EV supply equipment • Technical Datasheet		
UL Yellow Card [2]	• E121562-220779 • E121562-102516600		
Search for UL Yellow Card	• SABIC		
Availability	• Latin America	• North America	
Features	• Bromine Free • Chlorine Free	• Flame Retardant • Good Impact Resistance	• Halogen Free • Low Temperature Impact Resistance
Uses	• Aerospace Applications • Aircraft Interiors • Appliances • Automotive Electronics • Automotive Exterior Parts • Automotive Under the Hood • Batteries • Boat/Watercraft Applications • Building Materials • Camera Applications • Cell Phones • Cladding Capstock • Computer Components • Decorative Parts • Displays • Electric Vehicle (EV) Applications	• Electrical Parts • Electrical/Electronic Applications • Energy Storage • Filters • Fuel Tanks • Heavy Transportation • Housings • Industrial Applications • Irrigation Applications • Labware • Lawn and Garden Equipment • LEDs • Lighting Applications • Material Handling • Medical Devices • Medical/Healthcare Applications	• Military/Defense Applications • Oil/Gas Applications • Optical Applications • Personal Care • Pump Parts • Rail Applications • Recreational Vehicle Applications • Safety Helmets • Seats • Semiconductor Applications • Sporting Goods • Surgical Instruments • Swimming Pools • Water Management • Wire & Cable Applications
Processing Method	• Injection Molding		
Multi-Point Data	• Viscosity vs. Shear Rate (ASTM D3835)		
Also Available In	• Asia Pacific	• Europe	

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Document Created: Tuesday, January 30, 2024
Added to Prospector: November 2000
Last Updated: 9/29/2023

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity			
--	1.18	g/cm³	ASTM D792
--	1.19	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	9.0	cm³/10min	ISO 1133
Molding Shrinkage			Internal Method
Across Flow : 3.20 mm	0.40 to 0.80	%	
Flow : 3.20 mm	0.40 to 0.80	%	
Water Absorption			ISO 62
Saturation, 23°C	0.35	%	
Equilibrium, 23°C, 50% RH	0.15	%	
Outdoor Suitability	f1		UL 746C

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- [4]	2100	MPa	ASTM D638
--	2100	MPa	ISO 527-1/1
Tensile Strength			
Yield [5]	58.0	MPa	ASTM D638
Yield	55.0	MPa	ISO 527-2/50
Break [5]	61.0	MPa	ASTM D638
Break	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield [5]	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break [5]	130	%	ASTM D638
Break	130	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span [6]	2060	MPa	ASTM D790
-- [7]	2200	MPa	ISO 178
Flexural Stress			
-- [7, 8]	85.0	MPa	ISO 178
Yield, 50.0 mm Span [6]	88.0	MPa	ASTM D790

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [9]			ISO 179/1eA
-30°C	60	kJ/m²	
23°C	75	kJ/m²	
Charpy Unnotched Impact Strength [9]			ISO 179/1eU
-30°C	No Break		
23°C	No Break		

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Impact	Nominal Value Unit	Test Method
Notched Izod Impact		
-50°C	590 J/m	ASTM D256
-30°C	680 J/m	ASTM D256
23°C	800 J/m	ASTM D256
23°C [10]	1100 J/m	Internal Method
23°C, 6.40 mm	640 J/m	ASTM D256
-30°C [11]	55 kJ/m²	ISO 180/1A
-30°C [12]	65 kJ/m²	ISO 180/4A
23°C [11]	70 kJ/m²	ISO 180/1A
23°C [12]	80 kJ/m²	ISO 180/4A
Unnotched Izod Impact Strength [11]		ISO 180/1U
-30°C	No Break	
23°C	No Break	
Instrumented Dart Impact		ASTM D3763
23°C, Total Energy	52.0 J	
Hardness	**Nominal Value Unit**	**Test Method**
Ball Indentation Hardness (H 358/30)	90.0 MPa	ISO 2039-1
Thermal	**Nominal Value Unit**	**Test Method**
Deflection Temperature Under Load		
0.45 MPa, Unannealed, 3.20 mm	134 °C	ASTM D648
0.45 MPa, Unannealed, 4.00 mm, 100 mm Span [13]	135 °C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	120 °C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	124 °C	ASTM D648
1.8 MPa, Unannealed, 4.00 mm, 100 mm Span [13]	124 °C	ISO 75-2/Ae
Vicat Softening Temperature		
--	142 °C	ASTM D1525 [14] ISO 306/B120 [14]
--	140 °C	ISO 306/B50
Ball Pressure Test (123 to 127°C)	Pass	IEC 60695-10-2
CLTE		
Flow : -40 to 40°C	6.7E-5 cm/cm/°C	ASTM E831
Flow : 23 to 80°C	7.2E-5 cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	6.7E-5 cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.7E-5 cm/cm/°C	ISO 11359-2
RTI Elec	125 °C	UL 746B
RTI Imp	115 °C	UL 746B
RTI Str	125 °C	UL 746B
Electrical	**Nominal Value Unit**	**Test Method**
Surface Resistivity	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	> 1.0E+15 ohms·cm	IEC 60093
Dielectric Strength		
3.20 mm, in Oil	17 kV/mm	ASTM D149
3.20 mm, in Oil	16 kV/mm	IEC 60243-1

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Electrical	Nominal Value	Unit	Test Method
Dielectric Constant			
60 Hz	2.95		ASTM D150
50 kHz	2.95		ASTM D150
1 MHz	2.90		ASTM D150
50 Hz	2.60		IEC 60250
60 Hz	2.60		IEC 60250
1 MHz	2.70		IEC 60250
Dissipation Factor			
50 Hz	2.4E-3		ASTM D150
60 Hz	2.4E-3		ASTM D150
1 MHz	8.5E-3		ASTM D150 IEC 60250
50 Hz	1.0E-3		IEC 60250
60 Hz	1.0E-3		IEC 60250
Comparative Tracking Index (CTI)	PLC 3		UL 746A
Comparative Tracking Index	225	V	IEC 60112
High Amp Arc Ignition (HAI)			UL 746A
> 0.60 mm	PLC 1		
> 2.3 mm	PLC 0		
Hot-wire Ignition (HWI)			UL 746A
> 0.60 mm	PLC 3		
> 1.5 mm	PLC 2		
> 3.0 mm	PLC 1		

Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
> 0.60 mm	HB		
> 0.8 mm	V-1		
> 1.5 mm	V-0		
> 2.5 mm	5VB		
> 3.0 mm	5VA		
Glow Wire Flammability Index			IEC 60695-2-12
1.0 mm	960	°C	
1.5 mm	960	°C	
2.0 mm	960	°C	
2.3 mm	960	°C	
2.5 mm	960	°C	
3.0 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
1.0 mm	825	°C	
1.5 mm	825	°C	
2.0 mm	825	°C	
2.3 mm	825	°C	
2.5 mm	825	°C	
3.0 mm	825	°C	
Oxygen Index	35	%	ISO 4589-2

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Injection	Nominal Value	Unit
Drying Temperature	120	°C
Drying Time	3.0 to 4.0	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 to 60	%
Rear Temperature	235 to 295	°C
Middle Temperature	245 to 305	°C
Front Temperature	255 to 315	°C
Nozzle Temperature	250 to 310	°C
Processing (Melt) Temp	255 to 315	°C
Mold Temperature	70 to 95	°C
Back Pressure	0.300 to 0.700	MPa
Screw Speed	40 to 70	rpm
Vent Depth	0.025 to 0.076	mm

Injection Notes

- Drying Time (Cumulative): 48 hr

Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] 50 mm/min

[5] Type I, 50 mm/min

[6] 1.3 mm/min

[7] 2.0 mm/min

[8] at Yield

[9] 80*10*3 sp=62mm

[10] Double-gated

[11] 80*10*3 mm

[12] 63.5*12.7*3.2 mm

[13] 120*10*4 mm

[14] Rate A (50°C/h), Loading 2 (50 N)

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