# LEXAN™ Copolymer EXL9330 -Americas

# Polycarbonate **SABIC**

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

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## LEXAN<sup>™</sup> Copolymer EXL9330 - Americas

Polycarbonate



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Density / Specific Gravity         1.18 g/cm³         ASTM D792           -         1.19 g/cm³         ISO 1183           Mett Mass-Flow Rate (MFR) (300°C/1.2 kg)         10 g/10 min         ASTM D1238           Mett Volume-Flow Rate (MFR) (300°C/1.2 kg)         9.0 cm²10min         ISO 1183           Moding Shrinkage         Internal Method         Astm D1238           Moding Shrinkage         Internal Method         Astm D1238           Moding Shrinkage         Internal Method         ISO 62           Saturation, 23°C         0.35 %         ISO 62           Saturation, 23°C 50% RH         0.15 %         UL 746C           Outdoor Suitability         f1         UL 746C         Method           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus        4         2100 MPa         ASTM D633           -         2100 MPa         ISO 527-1/1         Tensile Strength           Yield 5         58.0 MPa         ASTM D638         S62 S7-2/50           Break 5         61.0 MPa         ASTM D638         S62 S7-2/50           Break 5         60.0 MPa         ISO 527-2/50         S62 S7-2/50           Tensile Elongation        7         2000 MPa         ISO 527-2/50	Physical	Nominal Value Unit	Test Method
-         1.18 g/cm³         ASTM D792           -         1.19 g/cm³         ISO 1183           Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)         9.0 cm²/10min         ASTM D1238           Melt Volume-Flow Rate (MFR) (300°C/1.2 kg)         9.0 cm²/10min         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 %         ISO 62           Saturation, 2°C         0.35 %         Equilibrium, 23°C, 50% RH         0.15 %           Outdoor Suitability         ft         UL 746 C           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus         -         -           -         4         2100 MPa         ASTM D638           -         4         2100 MPa         ISO 527-1/1           Tensile Strength         -         -         -           Yield 5         50.0 MPa         ISO 527-2/50         ISO 527-2/50           Break 6         60.0 MPa         ISO 527-2/50         ISO 527-2/50           Tensile Elongation         -         -         -           Yield 5         6.0 %         ASTM D638         ISO 527-2/50           Break 6         130	Density / Specific Gravity		
-         1.19 g/cm <sup>2</sup> ISO 1183           Meit Mass-Flow Rate (MFR) (300°C/1.2 kg)         10 g/10 min         ASTM D1238           Motiling 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         -         2100 MPa         ASTM D638           -         2100 MPa         ASTM D638         -           Yield <sup>5</sup> 58.0 MPa         ASTM D638         -           Break <sup>5</sup> 61.0 MPa         ASTM D638         -           Yield <sup>5</sup> 60.0 %         ASTM D638         -           Break <sup>5</sup> 60.0 %         ASTM D638         -           Break <sup>5</sup> <t< td=""><td></td><td>1.18 g/cm³</td><td>ASTM D792</td></t<>		1.18 g/cm³	ASTM D792
Mett Mass-Flow Rate (MFR) (300°C/1.2 kg)         10 g/10 min         ASTM D1238           Mett Volume-Flow Rate (MVR) (300°C/1.2 kg)         9.0 cm²10min         ISO 1133           Molding Shrinkage         Internal Method         Internal Method           Across Flow : 3.20 mm         0.40 to 0.80 %         IsO 62           Water Absorption         ISO 62         0.35 %           Equilibrium, 23°C, 60% RH         0.15 %         Outdoor Suitability           Methodulus         1         UL 746C          4         2100 MPa         ASTM D638          4         2100 MPa         ISO 62          4         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1           Tensile Modulus          2100 MPa            2100 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Yield <sup>5</sup> 50.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D638           Yield 5         0.0 %         ASTM D		1.19 g/cm <sup>3</sup>	ISO 1183
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          2100 MPa         ASTM D638           -         2100 MPa         ASTM D638         -           -         55.0 MPa         ISO 527-2/50         -           Break         60.0 MPa         ASTM D638         -           Yield <sup>5</sup> 6.0 %         ASTM D638         -           Yield <sup>5</sup> 6.0 %         ISO 527-2/50         -           Tensile Elongation         -         -         -         -           Yield <sup>5</sup>	Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10 g/10 min	ASTM D1238
Molding Shrinkage     Internal Method       Across 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     ft     UL 748C       Mechanical     Nominal Value Unit     Test Method       Tensile Modulus     -     2100 MPa        2100 MPa     ASTM D638        2100 MPa     ISO 527-1/1       Tensile Strength     -     2100 MPa       Yield <sup>5</sup> 58.0 MPa     ASTM D638       Yield <sup>5</sup> 58.0 MPa     ISO 527-2/50       Break <sup>6</sup> 61.0 MPa     ASTM D638       Yield <sup>5</sup> 6.0 %     ASTM D638       Preak <sup>6</sup> 61.0 MPa     ASTM D638       Yield <sup>5</sup> 6.0 %     ASTM D638       Break <sup>6</sup> 6.0 %     ISO 527-2/50       Fersile Elongation     -     -       Yield <sup>5</sup> 6.0 %     ASTM D638       Break <sup>6</sup> 130 %     ISO 527-2/50       Flexural Modulus     -     -       50.0 mm Span <sup>6</sup> 85.0 MPa <td>Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)</td> <td>9.0 cm<sup>3</sup>/10min</td> <td>ISO 1133</td>	Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	9.0 cm <sup>3</sup> /10min	ISO 1133
Across Flow : 3.20 mm       0.40 to 0.80 %         Flow : 3.20 mm       0.40 to 0.80 %         Flow : 3.20 mm       ISO 62         Saturation, 23°C       0.35 %         Equilibrium, 23°C, 50% RH       0.15 %         Outdoor Suitability       fl       UL 746C         Mechanical       Nominal Value Unit       Test Method         Tensile Modulus       -       -         -4       2100 MPa       ASTM D638          50.0 MPa       ASTM D638         Yield <sup>5</sup> 58.0 MPa       ASTM D638         Break <sup>5</sup> 61.0 MPa       ASTM D638         Break <sup>5</sup> 60.0 %       ISO 527-2/50         Tensile Elongation       -       -         Yield <sup>5</sup> 6.0 %       ASTM D638         Break <sup>5</sup> 130 %       ASTM D638         Break <sup>5</sup> 130 %       ASTM D638         Break <sup>5</sup> 130 %       ASTM D638         Break <sup>5</sup> <	Molding Shrinkage		Internal Method
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         fl         UL 746C           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus	Across 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         fl         UL 746C           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus        4         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1         Testile Modulus            2100 MPa         ASTM D638            2100 MPa         ISO 527-2/50           Break <sup>5</sup> 55.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break <sup>6</sup> 60.0 MPa         ISO 527-2/50           Tensile Elongation	Flow : 3.20 mm	0.40 to 0.80 %	
Saturation, 23°C         0.35 %           Equilibrium, 23°C, 50% RH         0.15 %           Outdoor Suitability         fl         UL 746C           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus         -         -          4         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1           Tensile Strength         -         -           Yield <sup>5</sup> 58.0 MPa         ASTM D638           Yield <sup>5</sup> 58.0 MPa         ASTM D638           Yield <sup>5</sup> 58.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break <sup>6</sup> 61.0 MPa         ASTM D638           Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ISO 527-2/50           Tensile Elongation         -         -           Yield <sup>5</sup> 6.0 %         ASTM D638           Break <sup>5</sup> 130 %         ISO 527-2/50           Flexural Modulus         -         So 527-2/50           Flexural Modulus         -         -           50.0 mm Sp	Water Absorption		ISO 62
Equilibrium, 23°C, 50% RH         0.15 %           Outdoor Suitability         f1         UL 746C           Mechanical         Nominal Value Unit         Tessile Method           Tensile Modulus         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1           Tensile Strength         58.0 MPa         ASTM D638            2100 MPa         ISO 527-1/1           Tensile Strength         58.0 MPa         ASTM D638           Yield <sup>6</sup> 55.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break <sup>5</sup> 61.0 MPa         ISO 527-2/50           Tensile Elongation         -         -           Yield <sup>6</sup> 6.0 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D790           -7         2000 MPa         <	Saturation, 23°C	0.35 %	
Outdoor Suitability         f1         UL 746C           Mechanical         Nominal Value Unit         Test Method           Tensile Modulus        4         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1         ISO 527-1/1           Tensile Strength          2100 MPa         ASTM D638            2100 MPa         ISO 527-2/50         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638         ISO 527-2/50           Tensile Elongation         -         ISO 527-2/50         ISO 527-2/50           Tensile Elongation         -         ISO 527-2/50         ISO 527-2/50           Tensile Elongation         -         -         ISO 527-2/50           Break <sup>5</sup> 130 %         ASTM D638         ISO 527-2/50           Break <sup>5</sup> 130 %         ISO 527-2/50         ISO 527-2/50           Flexural Modulus         50.0 mm Span <sup>6</sup> 2000 MPa         ASTM D790          7         2000 MPa         ISO 178         ISO 178           Flexural Stress         -         -         -         ISO 179/1eA           -30°C	Equilibrium, 23°C, 50% RH	0.15 %	
Mechanical     Nominal Value Unit     Test Method       Tensile Modulus    4     2100 MPa     ASTM D638        2100 MPa     ISO 527-1/1       Tensile Strength      2100 MPa     ISO 527-1/1       Tensile Strength      2100 MPa     ASTM D638       Yield <sup>5</sup> 58.0 MPa     ASTM D638       Yield <sup>5</sup> 58.0 MPa     ISO 527-2/50       Break <sup>5</sup> 61.0 MPa     ASTM D638       Break <sup>5</sup> 60.0 MPa     ISO 527-2/50       Tensile Elongation	Outdoor Suitability	f1	UL 746C
Tensile Modulus         -4         2100 MPa         ASTM D638            2100 MPa         ISO 527.1/1           Tensile Strength         -         -           Yield <sup>5</sup> 58.0 MPa         ASTM D638           Yield <sup>5</sup> 58.0 MPa         ASTM D638           Yield <sup>5</sup> 56.0 MPa         ISO 527.2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break <sup>5</sup> 60.0 MPa         ISO 527.2/50           Tensile Elongation         -         -           Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ISO 527.2/50           Break <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ISO 527.2/50           Flexural Modulus         50.0 mm Span <sup>6</sup> 2060 MPa           50.0 mm Span <sup>6</sup> 2060 MPa         ASTM D790          7. <sup>8</sup> 85.0 MPa         ISO 178           Yield, 50.0 mm Span <sup>6</sup> 80.0 MPa         ASTM D790           Impac	Mechanical	Nominal Value Unit	Test Method
4         2100 MPa         ASTM D638            2100 MPa         ISO 527-1/1           Tensile Strength             Yield 5         58.0 MPa         ASTM D638           Yield 5         55.0 MPa         ISO 527-2/50           Break 5         61.0 MPa         ASTM D638           Break 5         61.0 MPa         ASTM D638           Break 6         60.0 MPa         ISO 527-2/50           Tensile Elongation             Yield 5         6.0 %         ASTM D638           Break 5         130 %         ASTM D638           Break 5         130 %         ASTM D638           Break 5         130 %         ISO 527-2/50           Flexural Modulus             50.0 mm Span 6             -7         2200 MPa         ISO 178           Flexural Modulus             -7.8         85.0 MPa         ISO 178           Flexural Stress             -7.8         88.0 MPa         ASTM D790           Impact         Nominal Value Unit         Test Method           Charpy Notche	Tensile Modulus		
2100 MPa         ISO 527-1/1           Tensile Strength             Yield <sup>5</sup> 58.0 MPa         ASTM D638           Yield         55.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break -         60.0 MPa         ISO 527-2/50           Tensile Elongation             Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D638           Break 130 %         ISO 527-2/50           Flexural Modulus         50.0 mm Span <sup>6</sup> ISO 527-2/50           Flexural Modulus         50.0 mm Span <sup>6</sup> 2060 MPa         ASTM D638          7.7         2060 MPa         ASTM D790	4	2100 MPa	ASTM D638
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 5         61.0 MPa         ASTM D638           Break 6         60.0 MPa         ISO 527-2/50           Tensile Elongation         -         -           Yield 5         6.0 %         ASTM D638           Yield 5         6.0 %         ASTM D638           Yield 5         6.0 %         ASTM D638           Yield 5         130 %         ASTM D638           Break 5         130 %         ASTM D638           Break 5         130 %         ASTM D638           Break 1         130 %         ASTM D638           Break 1         130 %         ASTM D638           Break 1         130 %         ISO 527-2/50           Flexural Modulus         50.0 mm Span 6         ISO 527-2/50           Flexural Modulus         50.0 mm Span 6         2060 MPa         ASTM D790           -7         2000 MPa         ISO 178         Filexural Stress        7.8         85.0 MPa         ASTM D790           Impact         Nominal Value Unit         Test Method         ISO 179/1eA		2100 MPa	ISO 527-1/1
Yield         58.0 MPa         ASTM D638           Yield         55.0 MPa         ISO 527-2/50           Break <sup>5</sup> 61.0 MPa         ASTM D638           Break         60.0 MPa         ISO 527-2/50           Tensile Elongation	Tensile Strength		
Yield         55.0 MPa         ISO 527-2/50           Break         61.0 MPa         ASTM D638           Break         60.0 MPa         ISO 527-2/50           Tensile Elongation         -         -           Yield         6.0 %         ASTM D638           Yield         6.0 %         ASTM D638           Yield         6.0 %         ASTM D638           Yield         6.0 %         ISO 527-2/50           Break         130 %         ASTM D638           Yield         6.0 %         ISO 527-2/50           Break 5         130 %         ASTM D638           Break 6         130 %         ISO 527-2/50           Flexural Modulus         50.0 mm Span 6         2060 MPa         ASTM D790           -7         2000 mm Span 6         ISO 178         1SO 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 179/1eU         -30°C           -30°C         60 kJ/m²         -           23°C         75 kJ/m²         - <tr t="">Char</tr>	Yield <sup>5</sup>	58.0 MPa	ASTM D638
Break         61.0 MPa         ASTM D638           Break         60.0 MPa         ISO 527-2/50           Tensile Elongation             Yield <sup>5</sup> 6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ISO 527-2/50           Break <sup>5</sup> 6.0 %         ISO 527-2/50           Break <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ISO 527-2/50           Flexural Modulus <sup>5</sup> 50.0 mm Span <sup>6</sup> ISO 527-2/50           Flexural Stress <sup>-1,7,8</sup> 2060 MPa         ASTM D790 <sup>7,8</sup> 85.0 MPa         ISO 178           Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa         ASTM D790           Impact         Nominal Value Unit         Test Method           Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C           -30°C         75 k.J/m <sup>2</sup> ISO 179/1eU	Yield	55.0 MPa	ISO 527-2/50
Break         60.0 MPa         ISO 527-2/50           Tensile Elongation         6.0 %         ASTM D638           Yield <sup>5</sup> 6.0 %         ISO 527-2/50           Break <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D638           Break <sup>5</sup> 130 %         ASTM D638           Break         130 %         ISO 527-2/50           Flexural Modulus         1SO 527-2/50         So 527-2/50           Flexural Modulus         ISO 527-2/50         So 527-2/50           Flexural Modulus         1SO 527-2/50         So 527-2/50           Flexural Modulus         ISO 527-2/50         So 50.0 mm Span <sup>6</sup> ISO 527-2/50           Flexural Modulus         50.0 mm Span <sup>6</sup> 2060 MPa         ASTM D790          7         2000 MPa         ISO 178         So 178           Flexural Stress        7.8         85.0 MPa         ISO 178           Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa         ASTM D790         Impact           Impact         Nominal Value Unit         Test Method         ISO 179/1eA           -30°C         60 kJ/m <sup>2</sup> 23°C         To 179/1eV           -30°C         75 kJ/m <sup>2</sup> ISO 179/1eU         <	Break <sup>5</sup>	61.0 MPa	ASTM D638
Tensile Elongation         Yield <sup>5</sup> 6.0 %       ASTM D638         Yield       6.0 %       ISO 527-2/50         Break <sup>5</sup> 130 %       ASTM D638         Break <sup>6</sup> 130 %       ASTM D638         Break <sup>6</sup> 130 %       ASTM D638         Break <sup>6</sup> 130 %       ISO 527-2/50         Flexural Modulus       1SO 527-2/50       ISO 527-2/50         Flexural Modulus       1SO 527-2/50       ISO 178         50.0 mm Span <sup>6</sup> 2060 MPa       ASTM D790        7       2200 MPa       ISO 178         Flexural Stress      7, <sup>9</sup> 1SO 178        7, <sup>9</sup> 85.0 MPa       ISO 178         Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa       ASTM D790         Impact       Nominal Value Unit       Test Method         Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C       60 kJ/m <sup>2</sup> 23°C         23°C       75 kJ/m <sup>2</sup> ISO 179/1eU         -30°C       No Break       ISO 179/1eU	Break	60.0 MPa	ISO 527-2/50
Yield         6.0%         ASTM D638           Yield         6.0%         ISO 527-2/50           Break <sup>5</sup> 130%         ASTM D638           Break         130%         ASTM D638           Break         130%         ISO 527-2/50           Flexural Modulus         150 527-2/50         ISO 1527-2/50           Flexural Modulus         2060 MPa         ASTM D790	Tensile Elongation		
Yield         6.0%         ISO 527-2/50           Break 5         130 %         ASTM D638           Break         130 %         ISO 527-2/50           Flexural Modulus         1SO 527-2/50         ISO 527-2/50           Flexural Modulus         2060 MPa         ASTM D790          7         2000 MPa         ISO 178           Flexural Stress         1SO 178         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           -30°C         60 kJ/m²         23°C         75 kJ/m²           Charpy Unnotched Impact Strength 9         ISO 179/1eU         -30°C           -30°C         00 kJ/m²         23°C	Yield <sup>5</sup>	6.0 %	ASTM D638
Break <sup>6</sup> 130 %         ASTM D638           Break         130 %         ISO 527-2/50           Flexural Modulus         2060 MPa         ASTM D790          7         2000 MPa         ISO 178           Flexural Stress        7.8         85.0 MPa         ISO 178           Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa         ASTM D790           Impact         Nominal Value Unit         Test Method           Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C           -30°C         60 kJ/m <sup>2</sup> -           -30°C         No Break         ISO 179/1eU	Yield	6.0 %	ISO 527-2/50
Break130 %ISO 527-2/50Flexural Modulus50.0 mm Span 62060 MPaASTM D79072200 MPaISO 178Flexural Stress7.885.0 MPaISO 1787.885.0 MPaISO 178Yield, 50.0 mm Span 688.0 MPaASTM D790ImpactNominal Value UnitTest MethodCharpy Notched Impact Strength 9ISO 179/1eA-30°C60 kJ/m²_23°C75 kJ/m²Charpy Unnotched Impact Strength 9ISO 179/1eU-30°CNo Break23°CNo Break	Break <sup>5</sup>	130 %	ASTM D638
Flexural Modulus         2060 MPa         ASTM D790           50.0 mm Span 6         2000 MPa         ISO 178          7         2200 MPa         ISO 178           Flexural Stress	Break	130 %	ISO 527-2/50
50.0 mm Span <sup>6</sup> 2060 MPa       ASTM D790        7       2200 MPa       ISO 178         Flexural Stress      7.8       85.0 MPa       ISO 178         Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa       ASTM D790         Impact       Nominal Value Unit       Test Method         Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C       60 kJ/m²         -30°C       75 kJ/m²         Charpy Unnotched Impact Strength <sup>9</sup> ISO 179/1eU         -30°C       No Break         23°C       No Break	Flexural Modulus		
7         2200 MPa         ISO 178           Flexural Stress        7.8         85.0 MPa         ISO 178           Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa         ASTM D790           Impact         Nominal Value Unit         Test Method           Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C           23°C         75 kJ/m²         ISO 179/1eU           -30°C         No Break         23°C	50.0 mm Span <sup>6</sup>	2060 MPa	ASTM D790
Flexural Stress <sup>7,8</sup> 85.0 MPa       ISO 178         Yield, 50.0 mm Span <sup>6</sup> 88.0 MPa       ASTM D790         Impact       Nominal Value Unit       Test Method         Charpy Notched Impact Strength <sup>9</sup> ISO 179/1eA         -30°C       60 kJ/m²         23°C       75 kJ/m²         Charpy Unnotched Impact Strength <sup>9</sup> ISO 179/1eU         -30°C       0 kD Freak         23°C       No Break	7	2200 MPa	ISO 178
7.885.0 MPaISO 178Yield, 50.0 mm Span 688.0 MPaASTM D790ImpactNominal Value UnitTest MethodCharpy Notched Impact Strength 9ISO 179/1eA-30°C60 kJ/m²23°C75 kJ/m²Charpy Unnotched Impact Strength 9ISO 179/1eU-30°C0 kJ/m²23°C75 kJ/m²Charpy Unnotched Impact Strength 9ISO 179/1eU-30°CNo Break23°CNo Break	Flexural Stress		
Yield, 50.0 mm Span 688.0 MPaASTM D790ImpactNominal Value UnitTest MethodCharpy Notched Impact Strength 9ISO 179/1eA-30°C60 kJ/m²23°C75 kJ/m²Charpy Unnotched Impact Strength 9ISO 179/1eU-30°CNo Break23°CNo Break	7, 8	85.0 MPa	ISO 178
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	Yield 50.0 mm Span <sup>6</sup>	88.0 MPa	ASTM D790
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		Nominal Value Unit	Test Method
-30°C 60 kJ/m <sup>2</sup> 23°C 75 kJ/m <sup>2</sup> Charpy Unnotched Impact Strength <sup>9</sup> ISO 179/1eU -30°C No Break	Charpy Notched Impact Strength <sup>9</sup>		ISO 179/1eA
23°C     75 kJ/m²       Charpy Unnotched Impact Strength <sup>9</sup> ISO 179/1eU       -30°C     No Break       23°C     No Break	-30°C	60 k.l/m²	
Charpy Unnotched Impact Strength <sup>9</sup> -30°C No Break	23°C	75 k.l/m²	
-30°C No Break	Charpy Uppotched Impact Strength <sup>9</sup>	7010/11	ISO 179/1eU
23°C No Break		No Break	
	23°C	No Break	



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## LEXAN™ Copolymer EXL9330 - Americas

Polycarbonate



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 <sup>10</sup>	1100 J/m	Internal Method
23°C, 6.40 mm	640 J/m	ASTM D256
-30°C <sup>11</sup>	55 kJ/m²	ISO 180/1A
-30°C <sup>12</sup>	65 kJ/m²	ISO 180/4A
23°C <sup>11</sup>	70 kJ/m²	ISO 180/1A
23°C <sup>12</sup>	80 kJ/m²	ISO 180/4A
Unnotched Izod Impact Strength <sup>11</sup>		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 <sup>13</sup>	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 <sup>13</sup>	124 °C	ISO 75-2/Ae
Vicat Softening Temperature		
	142 °C	ASTM D1525 <sup>14</sup> ISO 306/B120 <sup>14</sup>
	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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## LEXAN™ Copolymer EXL9330 - Americas

Polycarbonate

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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		
0.0 mm	825 °C	

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### LEXAN<sup>™</sup> Copolymer EXL9330 - Americas Polycarbonate

SABIC



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

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Typical properties: these are not to be construed as specifications.

<sup>4</sup> 50 mm/min

<sup>5</sup> Type I, 50 mm/min

<sup>6</sup> 1.3 mm/min

<sup>7</sup> 2.0 mm/min

<sup>8</sup> at Yield

<sup>9</sup> 80\*10\*3 sp=62mm

<sup>10</sup> Double-gated

<sup>11</sup> 80\*10\*3 mm

<sup>12</sup> 63.5\*12.7\*3.2 mm

<sup>13</sup> 120\*10\*4 mm

<sup>14</sup> Rate A (50°C/h), Loading 2 (50 N)



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