

# LEXAN™ EXL1434 resin

Polycarbonate

SABIC Innovative Plastics

## Message:

LEXAN EXL1434 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade and is UV stabilized. This resin offers extreme low temperature (-40 C), exhibits excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1434 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications.

| General Information                        |                     |                        |                 |
|--------------------------------------------|---------------------|------------------------|-----------------|
| Additive                                   | UV Stabilizer       |                        |                 |
| Features                                   | Copolymer           |                        |                 |
|                                            | Fast Molding Cycle  |                        |                 |
|                                            | General Purpose     |                        |                 |
|                                            | Good Mold Release   |                        |                 |
|                                            | Good Processability |                        |                 |
|                                            | Medium Flow         |                        |                 |
| Appearance                                 | Colors Available    |                        |                 |
|                                            | Opaque              |                        |                 |
| Processing Method                          | Injection Molding   |                        |                 |
| Physical                                   | Nominal Value       | Unit                   | Test Method     |
| Specific Gravity                           |                     |                        |                 |
| --                                         | 1.18                | g/cm <sup>3</sup>      | ASTM D792       |
| --                                         | 1.19                | g/cm <sup>3</sup>      | 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) | 9.00                | cm <sup>3</sup> /10min | ISO 1133        |
| Molding Shrinkage                          |                     |                        | Internal Method |
| Flow : 3.20 mm                             | 0.40 to 0.80        | %                      |                 |
| 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                | %                      |                 |
| Hardness                                   | Nominal Value       | Unit                   | Test Method     |
| Rockwell Hardness                          |                     |                        | ASTM D785       |
| L-Scale                                    | 89                  |                        |                 |
| R-Scale                                    | 121                 |                        |                 |
| Mechanical                                 | Nominal Value       | Unit                   | Test Method     |
| Tensile Modulus                            |                     |                        |                 |
| -- <sup>1</sup>                            | 2020                | MPa                    | ASTM D638       |

|                                                 |               |                   |                                          |
|-------------------------------------------------|---------------|-------------------|------------------------------------------|
| --                                              | 2150          | MPa               | ISO 527-2/1                              |
| Tensile Strength                                |               |                   |                                          |
| Yield <sup>2</sup>                              | 55.5          | MPa               | ASTM D638                                |
| Yield                                           | 57.0          | MPa               | ISO 527-2/50                             |
| Break <sup>3</sup>                              | 50.3          | MPa               | ASTM D638                                |
| Break                                           | 60.0          | MPa               | ISO 527-2/50                             |
| Tensile Elongation                              |               |                   |                                          |
| Yield <sup>4</sup>                              | 6.0           | %                 | ASTM D638                                |
| Yield                                           | 6.0           | %                 | ISO 527-2/50                             |
| Break <sup>5</sup>                              | 98            | %                 | ASTM D638                                |
| Break                                           | 120           | %                 | ISO 527-2/50                             |
| Flexural Modulus                                |               |                   |                                          |
| 50.0 mm Span <sup>6</sup>                       | 2230          | MPa               | ASTM D790                                |
| -- <sup>7</sup>                                 | 2250          | MPa               | ISO 178                                  |
| Flexural Stress                                 |               |                   |                                          |
| --                                              | 85.0          | MPa               | ISO 178                                  |
| Yield, 50.0 mm Span <sup>8</sup>                | 92.4          | MPa               | ASTM D790                                |
| Impact                                          | Nominal Value | Unit              | Test Method                              |
| Charpy Notched Impact Strength <sup>9</sup>     |               |                   | ISO 179/1eA                              |
| -30°C                                           | 65            | kJ/m <sup>2</sup> |                                          |
| 23°C                                            | 70            | kJ/m <sup>2</sup> |                                          |
| Charpy Unnotched Impact Strength <sup>10</sup>  |               |                   | ISO 179/1eU                              |
| -30°C                                           | No Break      |                   |                                          |
| 23°C                                            | No Break      |                   |                                          |
| Notched Izod Impact                             |               |                   |                                          |
| -30°C                                           | 770           | J/m               | ASTM D256                                |
| 23°C                                            | 870           | J/m               | ASTM D256                                |
| -30°C <sup>11</sup>                             | 60            | kJ/m <sup>2</sup> | ISO 180/1A                               |
| 23°C <sup>12</sup>                              | 70            | kJ/m <sup>2</sup> | ISO 180/1A                               |
| Unnotched Izod Impact Strength <sup>13</sup>    |               |                   | ISO 180/1U                               |
| -30°C                                           | No Break      |                   |                                          |
| 23°C                                            | No Break      |                   |                                          |
| Instrumented Dart Impact (23°C, Total Energy)   | 70.0          | J                 | ASTM D3763                               |
| Thermal                                         | Nominal Value | Unit              | Test Method                              |
| Deflection Temperature Under Load               |               |                   |                                          |
| 0.45 MPa, Unannealed, 3.20 mm                   | 139           | °C                | ASTM D648                                |
| 0.45 MPa, Unannealed, 100 mm Span <sup>14</sup> | 140           | °C                | ISO 75-2/Be                              |
| 1.8 MPa, Unannealed, 3.20 mm                    | 124           | °C                | ASTM D648                                |
| 1.8 MPa, Unannealed, 100 mm Span <sup>15</sup>  | 128           | °C                | ISO 75-2/Ae                              |
| Vicat Softening Temperature                     |               |                   |                                          |
| --                                              | 145           | °C                | ASTM D1525, ISO 306/B50 11 <sup>16</sup> |

|                                        |                |           |                |
|----------------------------------------|----------------|-----------|----------------|
| --                                     | 146            | °C        | ISO 306/B120   |
| Ball Pressure Test (125°C)             | Pass           |           | IEC 60695-10-2 |
| CLTE                                   |                |           |                |
| Flow : -40 to 40°C                     | 7.0E-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               | 7.5E-5         | cm/cm/°C  | ASTM E831      |
| Transverse : 23 to 80°C                | 7.2E-5         | cm/cm/°C  | ISO 11359-2    |
| RTI Elec                               | 130            | °C        | UL 746         |
| RTI Imp                                | 120            | °C        | UL 746         |
| RTI Str                                | 125            | °C        | UL 746         |
| Electrical                             | Nominal Value  | Unit      | Test Method    |
| Surface Resistivity                    | > 1.0E+15      | ohms      | ASTM D257      |
| Volume Resistivity                     | > 1.0E+15      | ohms · cm | ASTM D257      |
| Dielectric Strength (0.800 mm, in Oil) | 16             | kV/mm     | ASTM D149      |
| Dielectric Constant                    |                |           | ASTM D150      |
| 100 Hz                                 | 2.68           |           |                |
| 1 MHz                                  | 2.64           |           |                |
| Dissipation Factor                     |                |           | ASTM D150      |
| 100 Hz                                 | 1.2E-3         |           |                |
| 1 MHz                                  | 9.3E-3         |           |                |
| Flammability                           | Nominal Value  | Unit      | Test Method    |
| Glow Wire Flammability Index           |                |           | IEC 60695-2-12 |
| 0.800 mm                               | 850            | °C        |                |
| 1.00 mm                                | 960            | °C        |                |
| Glow Wire Ignition Temperature         |                |           | IEC 60695-2-13 |
| 1.00 mm                                | 875            | °C        |                |
| 3.00 mm                                | 875            | °C        |                |
| Oxygen Index                           | 37             | %         | ISO 4589-2     |
| Injection                              | Nominal Value  | Unit      |                |
| Drying Temperature                     | 121            | °C        |                |
| Drying Time                            | 3.0 to 4.0     | hr        |                |
| Drying Time, Maximum                   | 48             | hr        |                |
| Suggested Max Moisture                 | 0.020          | %         |                |
| Suggested Shot Size                    | 40 to 60       | %         |                |
| Rear Temperature                       | 217 to 293     | °C        |                |
| Middle Temperature                     | 282 to 304     | °C        |                |
| Front Temperature                      | 293 to 316     | °C        |                |
| Nozzle Temperature                     | 288 to 310     | °C        |                |
| Processing (Melt) Temp                 | 293 to 316     | °C        |                |
| Mold Temperature                       | 71.0 to 93.0   | °C        |                |
| Back Pressure                          | 0.345 to 0.689 | MPa       |                |
| Screw Speed                            | 40 to 70       | rpm       |                |

|            |                                    |    |
|------------|------------------------------------|----|
| Vent Depth | 0.025 to 0.076                     | mm |
| NOTE       |                                    |    |
| 1.         | 50 mm/min                          |    |
| 2.         | Type I, 50 mm/min                  |    |
| 3.         | Type I, 50 mm/min                  |    |
| 4.         | Type I, 50 mm/min                  |    |
| 5.         | Type I, 50 mm/min                  |    |
| 6.         | 1.3 mm/min                         |    |
| 7.         | 2.0 mm/min                         |    |
| 8.         | 1.3 mm/min                         |    |
| 9.         | 80*10*3 sp=62mm                    |    |
| 10.        | 80*10*3 sp=62mm                    |    |
| 11.        | 80*10*3                            |    |
| 12.        | 80*10*3                            |    |
| 13.        | 80*10*3                            |    |
| 14.        | 120*10*4 mm                        |    |
| 15.        | 120*10*4 mm                        |    |
| 16.        | Rate B (120°C/h), Loading 2 (50 N) |    |

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