

# LEXAN™ ML6411 resin

Polycarbonate

SABIC Innovative Plastics Europe

## Message:

LEXAN ML6411 polycarbonate (PC) siloxane resin, is a high flow opaque injection molding (IM) grade with very low temperature ductility characteristics. This grade offers UL94 V0 @ 1.5mm and 5VA @ 3.0mm flame retardancy based on non-chlorine, non-bromine FR systems. LEXAN ML6411 resin offers excellent processing characteristics with opportunity for shorter IM cycle times compared to standard PC. This product is available in a wide range of opaque colors and is an excellent candidate for a wide range of electrical applications.

| General Information                        |                                    |           |                 |
|--------------------------------------------|------------------------------------|-----------|-----------------|
| UL YellowCard                              | E45329-100058759                   |           |                 |
| Additive                                   | Flame Retardant                    |           |                 |
| Features                                   | Bromine Free                       |           |                 |
|                                            | Chlorine Free                      |           |                 |
|                                            | Ductile                            |           |                 |
|                                            | Fast Molding Cycle                 |           |                 |
|                                            | Flame Retardant                    |           |                 |
|                                            | Good Processability                |           |                 |
|                                            | High Flow                          |           |                 |
| Uses                                       | Electrical/Electronic Applications |           |                 |
| RoHS Compliance                            | RoHS Compliant                     |           |                 |
| Appearance                                 | Opaque                             |           |                 |
| Processing Method                          | Injection Molding                  |           |                 |
| Physical                                   | Nominal Value                      | Unit      | Test Method     |
| Specific Gravity                           |                                    |           |                 |
| --                                         | 1.19                               | g/cm³     | ASTM D792       |
| --                                         | 1.20                               | g/cm³     | ISO 1183        |
| Melt Mass-Flow Rate (MFR)                  |                                    |           | ASTM D1238      |
| 260°C/2.16 kg                              | 7.0                                | g/10 min  |                 |
| 300°C/1.2 kg                               | 15                                 | g/10 min  |                 |
| Melt Volume-Flow Rate (MVR) (260°C/5.0 kg) | 18.0                               | cm³/10min | ISO 1133        |
| Molding Shrinkage - Flow (3.20 mm)         | 0.40 to 0.80                       | %         | Internal Method |
| Water Absorption                           |                                    |           | ISO 62          |
| Saturation, 23°C                           | 0.30                               | %         |                 |
| Equilibrium, 23°C, 50% RH                  | 0.10                               | %         |                 |
| Mechanical                                 | Nominal Value                      | Unit      | Test Method     |
| Tensile Modulus                            |                                    |           |                 |
| -- <sup>1</sup>                            | 2500                               | MPa       | ASTM D638       |
| --                                         | 2350                               | MPa       | ISO 527-2/1     |

|                                                 |               |                   |                                          |
|-------------------------------------------------|---------------|-------------------|------------------------------------------|
| Tensile Strength                                |               |                   |                                          |
| Yield <sup>2</sup>                              | 62.0          | MPa               | ASTM D638                                |
| Yield                                           | 62.0          | MPa               | ISO 527-2/50                             |
| Break <sup>3</sup>                              | 54.0          | MPa               | ASTM D638                                |
| Break                                           | 58.0          | MPa               | ISO 527-2/50                             |
| Tensile Elongation                              |               |                   |                                          |
| Yield <sup>4</sup>                              | 5.0           | %                 | ASTM D638                                |
| Yield                                           | 5.0           | %                 | ISO 527-2/50                             |
| Break <sup>5</sup>                              | 100           | %                 | ASTM D638                                |
| Break                                           | 100           | %                 | ISO 527-2/50                             |
| Flexural Modulus                                |               |                   |                                          |
| 50.0 mm Span <sup>6</sup>                       | 2600          | MPa               | ASTM D790                                |
| -- <sup>7</sup>                                 | 2350          | MPa               | ISO 178                                  |
| Flexural Stress                                 |               |                   |                                          |
| --                                              | 90.0          | MPa               | ISO 178                                  |
| Yield, 50.0 mm Span <sup>8</sup>                | 95.0          | MPa               | ASTM D790                                |
| Impact                                          | Nominal Value | Unit              | Test Method                              |
| Notched Izod Impact                             |               |                   |                                          |
| -30°C                                           | 150           | J/m               | ASTM D256                                |
| 23°C                                            | 900           | J/m               | ASTM D256                                |
| -30°C <sup>9</sup>                              | 15            | kJ/m <sup>2</sup> | ISO 180/1A                               |
| 23°C <sup>10</sup>                              | 60            | kJ/m <sup>2</sup> | ISO 180/1A                               |
| Instrumented Dart Impact (23°C, Total Energy)   | 72.0          | J                 | ASTM D3763                               |
| Thermal                                         | Nominal Value | Unit              | Test Method                              |
| Deflection Temperature Under Load               |               |                   |                                          |
| 0.45 MPa, Unannealed, 6.40 mm                   | 128           | °C                | ASTM D648                                |
| 0.45 MPa, Unannealed, 100 mm Span <sup>11</sup> | 125           | °C                | ISO 75-2/Be                              |
| 1.8 MPa, Unannealed, 3.20 mm                    | 114           | °C                | ASTM D648                                |
| 1.8 MPa, Unannealed, 6.40 mm                    | 119           | °C                | ASTM D648                                |
| 1.8 MPa, Unannealed, 100 mm Span <sup>12</sup>  | 115           | °C                | ISO 75-2/Ae                              |
| Vicat Softening Temperature                     |               |                   |                                          |
| --                                              | 134           | °C                | ASTM D1525, ISO 306/B50 10 <sup>13</sup> |
| --                                              | 135           | °C                | ISO 306/B120                             |
| Ball Pressure Test (125°C)                      | Pass          |                   | IEC 60695-10-2                           |
| CLTE                                            |               |                   |                                          |
| Flow : -40 to 40°C                              | 7.7E-5        | cm/cm/°C          | ASTM E831                                |
| Flow : -40 to 40°C                              | 7.0E-5        | cm/cm/°C          | ISO 11359-2                              |
| Transverse : -40 to 40°C                        | 5.9E-5        | cm/cm/°C          | ASTM E831                                |
| Transverse : -40 to 40°C                        | 7.0E-5        | cm/cm/°C          | ISO 11359-2                              |
| RTI Elec                                        | 100           | °C                | UL 746                                   |
| RTI Imp                                         | 100           | °C                | UL 746                                   |

| RTI Str                                | 100               | °C      | UL 746         |
|----------------------------------------|-------------------|---------|----------------|
| Electrical                             | Nominal Value     | Unit    | Test Method    |
| Volume Resistivity                     | > 1.0E+15         | ohms·cm | IEC 60093      |
| Dielectric Strength (3.20 mm, in Oil)  | 27                | kV/mm   | ASTM D149      |
| Comparative Tracking Index (CTI)       | PLC 2             |         | UL 746         |
| Comparative Tracking Index             | 250               | V       | IEC 60112      |
| High Amp Arc Ignition (HAI)            | PLC 1             |         | UL 746         |
| Hot-wire Ignition (HWI)                | PLC 3             |         | UL 746         |
| Flammability                           | Nominal Value     | Unit    | Test Method    |
| Flame Rating                           |                   |         | UL 94          |
| 1.50 mm                                | V-0               |         |                |
| 2.00 mm                                | 5VB               |         |                |
| 3.00 mm                                | 5VA               |         |                |
| 3.00 mm, Testing by SABIC              | 5VA               |         |                |
| Glow Wire Flammability Index (1.00 mm) | 960               | °C      | IEC 60695-2-12 |
| Glow Wire Ignition Temperature         |                   |         | IEC 60695-2-13 |
| 1.00 mm                                | 800               | °C      |                |
| 2.00 mm                                | 800               | °C      |                |
| 3.00 mm                                | 800               | °C      |                |
| Injection                              | Nominal Value     | Unit    |                |
| Drying Temperature                     | 90.0 to 100       | °C      |                |
| Drying Time                            | 2.0 to 4.0        | hr      |                |
| Suggested Max Moisture                 | 0.020             | %       |                |
| Hopper Temperature                     | 60.0 to 80.0      | °C      |                |
| Rear Temperature                       | 230 to 260        | °C      |                |
| Middle Temperature                     | 250 to 290        | °C      |                |
| Front Temperature                      | 260 to 300        | °C      |                |
| Nozzle Temperature                     | 250 to 290        | °C      |                |
| Processing (Melt) Temp                 | 270 to 300        | °C      |                |
| Mold Temperature                       | 60.0 to 90.0      | °C      |                |
| 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           |         |                |
| 10.                                    | 80*10*3           |         |                |
| 11.                                    | 120*10*4 mm       |         |                |

|     |                                    |
|-----|------------------------------------|
| 12. | 120*10*4 mm                        |
| 13. | Rate B (120°C/h), Loading 2 (50 N) |

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection. All rights belong to the original authors. If any infringement occurs, please contact us immediately.

#### Recommended distributors for this material

### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

