

## SABIC Innovative Plastics Lexan® ML3999 PC (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

### Material Notes:

LEXAN ML3999 is a medium viscosity, 20% glass reinforced grade. It offers excellent flame retardancy and is especially designed for applications requiring high rigidity together with high heat.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Lexan-ML3999-PC-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-ML3999-PC-Europe-Africa-Middle-East.php)

| Physical Properties            | Metric   | English  | Comments                                |
|--------------------------------|--|--|---|
| Density                        | 1.35 g/cc  | 0.0488 lb/in <sup>3</sup>                            | ISO 1183                                |
| Moisture Absorption            | 0.120 %  | 0.120 %  | 23°C / 50% RH; ISO 62                   |
| Water Absorption at Saturation | 0.29 %   | 0.29 %   | ISO 62                                  |
| Linear Mold Shrinkage, Flow    | 0.0020 - 0.0050 cm/cm                                | 0.0020 - 0.0050 in/in                                | on Tensile Bar; SABIC Method            |
| Melt Index of Compound         | 9.0 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C | 9.0 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties        | Metric  | English   | Comments                           |
|------------------------------|---|---|------------------------------------|
| Hardness, H358/30            | 125 MPa   | 18100 psi   | ISO 2039-1                         |
| Tensile Strength at Break    | 90.0 MPa  | 13100 psi   | 5 mm/min; ISO 527                  |
| Elongation at Break          | 2.0 %   | 2.0 %   | 5 mm/min; ISO 527                  |
| Tensile Modulus              | 6.00 GPa  | 870 ksi   | 1 mm/min; ISO 527                  |
| Flexural Strength            | 120 MPa   | 17400 psi   | 2 mm/min; ISO 178                  |
| Flexural Modulus             | 5.50 GPa  | 798 ksi   | 2 mm/min; ISO 178                  |
| Izod Impact, Notched (ISO)   | 7.00 kJ/m <sup>2</sup>                          | 3.33 ft-lb/in <sup>2</sup>                          | 80*10*3; ISO 180/1A                |
|                              | 6.00 kJ/m <sup>2</sup><br>@Temperature -30.0 °C | 2.86 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | 80*10*3; ISO 180/1A                |
| Izod Impact, Unnotched (ISO) | 30.0 kJ/m <sup>2</sup>                          | 14.3 ft-lb/in <sup>2</sup>                          | 80*10*3; ISO 180/1U                |
|                              | 30.0 kJ/m <sup>2</sup><br>@Temperature -30.0 °C | 14.3 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | 80*10*3; ISO 180/1U                |
| Charpy Impact Unnotched      | 3.50 J/cm <sup>2</sup>                          | 16.7 ft-lb/in <sup>2</sup>                          | Edgew 80*10*3 sp=62mm; ISO 179/1eU |

| Mechanical Properties          | 3.50 J/cm <sup>2</sup><br>Metric | 16.7 ft-lb/in <sup>2</sup><br>English | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
|--------------------------------|----------------------------------|---------------------------------------|------------------------------------|
|                                | @Temperature -30.0 °C            | @Temperature -22.0 °F                 |                                    |
| Charpy Impact, Notched         | 0.600 J/cm <sup>2</sup>          | 2.86 ft-lb/in <sup>2</sup>            | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
|                                | 0.900 J/cm <sup>2</sup>          | 4.28 ft-lb/in <sup>2</sup>            | ISO 179/2C                         |
|                                | 0.500 J/cm <sup>2</sup>          | 2.38 ft-lb/in <sup>2</sup>            | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
|                                | @Temperature -30.0 °C            | @Temperature -22.0 °F                 |                                    |
| Taber Abrasion, mg/1000 Cycles | 17                               | 17                                    | CS-17, 1 kg; SABIC Method          |

| Thermal Properties                          | Metric                      | English                            | Comments                           |
|---|-----------------------------|------------------------------------|------------------------------------|
| CTE, linear, Parallel to Flow               | 30.0 µm/m-°C                | 16.7 µin/in-°F                     | ISO 11359-2                        |
|   | @Temperature 23.0 - 80.0 °C | @Temperature 73.4 - 176 °F         |                                    |
| Thermal Conductivity                        | 0.220 W/m-K                 | 1.53 BTU-in/hr-ft <sup>2</sup> -°F | ISO 8302                           |
| Deflection Temperature at 0.46 MPa (66 psi) | 143 °C                      | 289 °F                             | Edgew 120*10*4 sp=100mm; ISO 75/Be |
| Deflection Temperature at 1.8 MPa (264 psi) | 138 °C                      | 280 °F                             | Edgew 120*10*4 sp=100mm; ISO 75/Ae |
| Vicat Softening Point                       | 144 °C                      | 291 °F                             | Rate B/120; ISO 306                |
|   | 145 °C                      | 293 °F                             | Rate B/50; ISO 306                 |
|   | 154 °C                      | 309 °F                             | Rate A/50; ISO 306                 |
| UL RTI, Electrical                          | 130 °C                      | 266 °F                             | UL 746B                            |
| UL RTI, Mechanical with Impact              | 125 °C                      | 257 °F                             | UL 746B                            |
| UL RTI, Mechanical without Impact           | 130 °C                      | 266 °F                             | UL 746B                            |
| Flammability, UL94                          | V-0                         | V-0                                | UL 94                              |
|   | @Thickness 1.50 mm          | @Thickness 0.0591 in               |                                    |
| Oxygen Index                                | 37 %                        | 37 %                               | ISO 4589                           |
| Glow Wire Test                              | 850 °C                      | 1560 °F                            | IEC 60695-2-12                     |
|   | @Thickness 1.00 mm          | @Thickness 0.0394 in               |                                    |
|   | 960 °C                      | 1760 °F                            | IEC 60695-2-12                     |
|   | @Thickness 1.60 mm          | @Thickness 0.0630 in               |                                    |

| Electrical Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
|-----------------------|--------|---------|----------|

| Volume Resistivity<br>Electrical Properties | $\geq 1.00e+15$ ohm-cm<br>Metric | $\geq 1.00e+15$ ohm-cm<br>English | IEC 60093<br>Comments   |
|---|----------------------------------|-----------------------------------|-------------------------|
| Surface Resistance                          | $\geq 1.00e+15$ ohm              | $\geq 1.00e+15$ ohm               | ROA; IEC 60093          |
| Dielectric Constant                         | 2.9                              | 2.9                               | IEC 60250               |
|   | @Frequency 1.00e+6<br>Hz         | @Frequency 1.00e+6<br>Hz          |                         |
|   | 3.0                              | 3.0                               | IEC 60250               |
|   | @Frequency 50.0 - 60.0<br>Hz     | @Frequency 50.0 - 60.0<br>Hz      |                         |
| Dielectric Strength                         | 16.0 kV/mm                       | 406 kV/in                         | in oil; IEC 60243-1     |
|   | @Thickness 3.20 mm               | @Thickness 0.126 in               |                         |
|   | 20.0 kV/mm                       | 508 kV/in                         | short time; IEC 60243-1 |
|   | @Thickness 1.00 mm               | @Thickness 0.0394 in              |                         |
|   | 25.0 kV/mm                       | 635 kV/in                         | in oil; IEC 60243-1     |
|   | @Thickness 1.60 mm               | @Thickness 0.0630 in              |                         |
|   | 33.0 kV/mm                       | 838 kV/in                         | in oil; IEC 60243-1     |
|   | @Thickness 0.800 mm              | @Thickness 0.0315 in              |                         |
| Dissipation Factor                          | 0.0010                           | 0.0010                            | IEC 60250               |
|   | @Frequency 50.0 - 60.0<br>Hz     | @Frequency 50.0 - 60.0<br>Hz      |                         |
|   | 0.010                            | 0.010                             | IEC 60250               |
|   | @Frequency 1.00e+6<br>Hz         | @Frequency 1.00e+6<br>Hz          |                         |
| Comparative Tracking Index                  | 150 V                            | 150 V                             | IEC 60112               |

| Descriptive Properties            | Value  | Comments       |
|-----------------------------------|--------|----------------|
| Ball Pressure Test, 125°C +/- 2°C | PASSES | IEC 60695-10-2 |
| Haze, 2.54 mm                     | NA%    | ASTM D1003     |

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