

# LEXAN<sup>TM</sup> RESIN 103

REGION AMERICAS

## DESCRIPTION

UL rated HB as of 10/97. 200 series recommended when V-2 rating required. Nonhalogenated. 7.0 MFR, for thicker sections without sinks. UV stabilized for outdoor and lighting.

## TYPICAL PROPERTY VALUES

Revision 20190214

| PROPERTIES                                   | TYPICAL VALUES | UNITS              | TEST METHODS |
|--|----------------|--------------------|--------------|
| <b>MECHANICAL</b>                            |                |                    |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 62             | MPa                | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 65             | MPa                | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 7              | %                  | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 110            | %                  | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 93             | MPa                | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2340           | MPa                | ASTM D 790   |
| Hardness, Rockwell M                         | 70             | -                  | ASTM D 785   |
| Hardness, Rockwell R                         | 118            | -                  | ASTM D 785   |
| Taber Abrasion, CS-17, 1 kg                  | 10             | mg/1000cy          | ASTM D 1044  |
| <b>IMPACT</b>                                |                |                    |              |
| Izod Impact, unnotched, 23°C                 | 3204           | J/m                | ASTM D 4812  |
| Izod Impact, notched, 23°C                   | 907            | J/m                | ASTM D 256   |
| Tensile Impact, Type S                       | 546            | kJ/m <sup>2</sup>  | ASTM D 1822  |
| Falling Dart Impact (D 3029), 23°C           | 169            | J                  | ASTM D 3029  |
| <b>THERMAL</b>                               |                |                    |              |
| Vicat Softening Temp, Rate B/50              | 154            | °C                 | ASTM D 1525  |
| HDT, 0.45 MPa, 6.4 mm, unannealed            | 137            | °C                 | ASTM D 648   |
| HDT, 1.82 MPa, 6.4 mm, unannealed            | 132            | °C                 | ASTM D 648   |
| CTE, -40°C to 95°C, flow                     | 6.84E-05       | 1/°C               | ASTM E 831   |
| Specific Heat                                | 1.25           | J/g-°C             | ASTM C 351   |
| Thermal Conductivity                         | 0.19           | W/m-°C             | ASTM C 177   |
| Relative Temp Index, Elec                    | 130            | °C                 | UL 746B      |
| Relative Temp Index, Mech w/impact           | 130            | °C                 | UL 746B      |
| Relative Temp Index, Mech w/o impact         | 130            | °C                 | UL 746B      |
| <b>PHYSICAL</b>                              |                |                    |              |
| Specific Gravity                             | 1.2            | -                  | ASTM D 792   |
| Specific Volume                              | 0.83           | cm <sup>3</sup> /g | ASTM D 792   |
| Density                                      | 1.19           | g/cm <sup>3</sup>  | ASTM D 792   |
| Water Absorption, 24 hours                   | 0.15           | %                  | ASTM D 570   |
| Water Absorption, equilibrium, 23C           | 0.35           | %                  | ASTM D 570   |
| Water Absorption, equilibrium, 100°C         | 0.58           | %                  | ASTM D 570   |
| Mold Shrinkage, flow, 3.2 mm                 | 0.5 – 0.7      | %                  | SABIC method |
| Melt Flow Rate, 300°C/1.2 kgf                | 7              | g/10 min           | ASTM D 1238  |
| <b>OPTICAL</b>                               |                |                    |              |

| PROPERTIES                             | TYPICAL VALUES | UNITS    | TEST METHODS |
|--|----------------|----------|--------------|
| Light Transmission, 2.54 mm            | 88             | %        | ASTM D 1003  |
| Haze, 2.54 mm                          | 1              | %        | ASTM D 1003  |
| Refractive Index                       | 1.586          | -        | ASTM D542    |
| <b>ELECTRICAL</b>                      |                |          |              |
| Volume Resistivity                     | >1.E+17        | Ohm-cm   | ASTM D 257   |
| Dielectric Strength, in air, 3.2 mm    | 14.9           | kV/mm    | ASTM D 149   |
| Relative Permittivity, 50/60 Hz        | 3.17           | -        | ASTM D 150   |
| Relative Permittivity, 1 MHz           | 2.96           | -        | ASTM D 150   |
| Dissipation Factor, 50/60 Hz           | 0.0009         | -        | ASTM D 150   |
| Dissipation Factor, 1 MHz              | 0.01           | -        | ASTM D 150   |
| Hot Wire Ignition {PLC}                | 4              | PLC Code | UL 746A      |
| High Voltage Arc Track Rate {PLC}      | 2              | PLC Code | UL 746A      |
| High Ampere Arc Ign, surface {PLC}     | 1              | PLC Code | UL 746A      |
| Comparative Tracking Index (UL) {PLC}  | 2              | PLC Code | UL 746A      |
| <b>FLAME CHARACTERISTICS</b>           |                |          |              |
| UL Recognized, 94HB Flame Class Rating | 0.73           | mm       | UL 94        |
| UV-light, water exposure/immersion     | F1             | -        | UL 746C      |
| <b>INJECTION MOLDING</b>               |                |          |              |
| Drying Temperature                     | 120            | °C       |              |
| Drying Time                            | 3 – 4          | hrs      |              |
| Drying Time (Cumulative)               | 48             | hrs      |              |
| Maximum Moisture Content               | 0.02           | %        |              |
| Melt Temperature                       | 310 – 330      | °C       |              |
| Nozzle Temperature                     | 305 – 325      | °C       |              |
| Front - Zone 3 Temperature             | 310 – 330      | °C       |              |
| Middle - Zone 2 Temperature            | 300 – 320      | °C       |              |
| Rear - Zone 1 Temperature              | 290 – 310      | °C       |              |
| Mold Temperature                       | 80 – 115       | °C       |              |
| Back Pressure                          | 0.3 – 0.7      | MPa      |              |
| Screw Speed                            | 40 – 70        | rpm      |              |
| Shot to Cylinder Size                  | 40 – 60        | %        |              |
| Vent Depth                             | 0.025 – 0.076  | mm       |              |

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