



## LEXAN® BPL1000

Asia Pacific: COMMERCIAL

Non-brominated, non-chlorinated flame retardant PC. Low viscosity. Available in opaque colors.

### Features

Heat Stabilized

Opaque

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | UNIT              | STANDARD    |
|----------------------------------------------|---------------|-------------------|-------------|
| <b>MECHANICAL</b>                            |               |                   |             |
| Tensile Stress, yield                        | 59            | MPa               | GEPJ Method |
| Tensile Stress, yld, Type I, 50 mm/min       | 63            | MPa               | ASTM D 638  |
| Tensile Stress, brk, Type I, 50 mm/min       | 51            | MPa               | ASTM D 638  |
| Tensile Strain, break                        | 100 - 100     | %                 | GEPJ Method |
| Tensile Strain, yld, Type I, 50 mm/min       | 4.8           | %                 | ASTM D 638  |
| Tensile Strain, brk, Type I, 50 mm/min       | 96.4          | %                 | ASTM D 638  |
| Tensile Modulus, 5 mm/min                    | 2680          | MPa               | ASTM D 638  |
| Flexural Stress                              | 93            | MPa               | ASTM D 790  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 102           | MPa               | ASTM D 790  |
| Flexural Modulus                             | 2200          | MPa               | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2670          | MPa               | ASTM D 790  |
| Tensile Stress, yield, 50 mm/min             | 65            | MPa               | ISO 527     |
| Tensile Stress, break, 50 mm/min             | 53            | MPa               | ISO 527     |
| Tensile Strain, yield, 50 mm/min             | 4.7           | %                 | ISO 527     |
| Tensile Strain, break, 50 mm/min             | 96.8          | %                 | ISO 527     |
| Tensile Modulus, 1 mm/min                    | 2460          | MPa               | ISO 527     |
| Flexural Stress, yield, 2 mm/min             | 95            | MPa               | ISO 178     |
| Flexural Modulus, 2 mm/min                   | 2370          | MPa               | ISO 178     |
| <b>IMPACT</b>                                |               |                   |             |
| Izod Impact, notched, 23°C                   | 600           | J/m               | ASTM D 256  |
| Izod Impact, notched, -30°C                  | N/A           | J/m               | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C       | 49            | J                 | ASTM D 3763 |
| Izod Impact, notched 80*10*4 +23°C           | 18            | kJ/m <sup>2</sup> | ISO 180/1A  |
| Izod Impact, notched 80*10*4 -30°C           | 12            | kJ/m <sup>2</sup> | ISO 180/1A  |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 18            | kJ/m <sup>2</sup> | ISO 179/1eA |
| <b>THERMAL</b>                               |               |                   |             |
| Vicat Softening Temp, Rate B/50              | 111           | °C                | ASTM D 1525 |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity.  
All properties, except the melt volume rate are measured on injection moulded samples.  
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.  
3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.  
4) Own measurement according to UL.





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| TYPICAL PROPERTIES <sup>1</sup>             | TYPICAL VALUE   | UNIT                    | STANDARD       |
|---------------------------------------------|-----------------|-------------------------|----------------|
| HDT, 0.45 MPa, 3.2 mm, unannealed           | 106             | °C                      | ASTM D 648     |
| CTE, -40°C to 40°C, flow                    | 7.E-05          | 1/°C                    | ASTM E 831     |
| CTE, -40°C to 40°C, xflow                   | 7.E-05          | 1/°C                    | ASTM E 831     |
| CTE, -30°C to 30°C                          | 7.E-05 - 7.E-05 | 1/°C                    | TMA            |
| CTE, -40°C to 40°C, flow                    | 7.E-05          | 1/°C                    | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow                   | 7.E-05          | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 75°C +/- 2°C            | PASS            | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50             | 113             | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120            | 114             | °C                      | ISO 306        |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm       | 122             | °C                      | ISO 75/Af      |
| Relative Temp Index, Elec                   | 80              | °C                      | UL 746B        |
| Relative Temp Index, Mech w/impact          | 80              | °C                      | UL 746B        |
| Relative Temp Index, Mech w/o impact        | 80              | °C                      | UL 746B        |
| <b>PHYSICAL</b>                             |                 |                         |                |
| Specific Gravity                            | 1.17            | -                       | ASTM D 792     |
| Water Absorption, 24 hours                  | 0.15            | %                       | ASTM D 570     |
| Mold Shrinkage on Tensile Bar, flow (2)     | 0.5 - 0.7       | %                       | GE Method      |
| Mold Shrinkage, flow, 3.2 mm                | 0.5 - 0.7       | %                       | GE Method      |
| Mold Shrinkage, xflow, 3.2 mm               | 0.5 - 0.7       | %                       | GE Method      |
| Melt Flow Rate, 300°C/1.2 kgf               | 25.3            | g/10 min                | ASTM D 1238    |
| Density                                     | 1.2             | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)                | 0.35            | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)         | 0.15            | %                       | ISO 62         |
| Melt Volume Rate, MVR at 300°C/1.2 kg       | 23              | cm <sup>3</sup> /10 min | ISO 1133       |
| <b>ELECTRICAL</b>                           |                 |                         |                |
| Dielectric Strength, in oil, 1.6 mm         | 27              | kV/mm                   | ASTM D 149     |
| Volume Resistivity                          | >1.E+15         | Ohm-cm                  | IEC 60093      |
| Surface Resistivity, ROA                    | >1.E+15         | Ohm                     | IEC 60093      |
| Relative Permittivity, 50/60 Hz             | 3               | -                       | IEC 60250      |
| Relative Permittivity, 1 MHz                | 2.9             | -                       | IEC 60250      |
| Dissipation Factor, 50/60 Hz                | 0.03            | -                       | IEC 60250      |
| Dissipation Factor, 1 MHz                   | 0.01            | -                       | IEC 60250      |
| Comparative Tracking Index                  | 200             | V                       | IEC 60112      |
| <b>FLAME CHARACTERISTICS</b>                |                 |                         |                |
| UL Recognized, 94V-2 Flame Class Rating (3) | 0.5             | mm                      | UL 94          |
| UL Recognized, 94V-0 Flame Class Rating (3) | 0.8             | mm                      | UL 94          |

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| TYPICAL PROPERTIES <sup>1</sup>               | TYPICAL VALUE | UNIT | STANDARD       |
|-----------------------------------------------|---------------|------|----------------|
| Glow Wire Flammability Index 960°C, passes at | 1             | mm   | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 1.0 mm    | 800           | °C   | IEC 60695-2-13 |
| Oxygen Index (LOI)                            | 36            | %    | ISO 4589       |

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| PROCESSING PARAMETERS       | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 90            | °C   |
| Drying Time                 | 4             | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 280 - 300     | °C   |
| Nozzle Temperature          | 270 - 290     | °C   |
| Front - Zone 3 Temperature  | 280 - 300     | °C   |
| Middle - Zone 2 Temperature | 270 - 290     | °C   |
| Rear - Zone 1 Temperature   | 260 - 280     | °C   |
| Hopper Temperature          | 60 - 80       | °C   |
| Mold Temperature            | 90            | °C   |

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