



**LEXAN™ Resin HFD1212**  
**Americas: COMMERCIAL**

18 MFR LEXAN High Flow Ductile Copolymer

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard    |
|----------------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                            |               |                     |             |
| Tensile Stress, yld, Type I, 50 mm/min       | 590           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Stress, brk, Type I, 50 mm/min       | 640           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, yld, Type I, 50 mm/min       | 6             | %                   | ASTM D 638  |
| Tensile Strain, brk, Type I, 50 mm/min       | 135           | %                   | ASTM D 638  |
| Tensile Modulus, 5 mm/min                    | 22800         | kgf/cm <sup>2</sup> | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 990           | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 22600         | kgf/cm <sup>2</sup> | ASTM D 790  |
| Hardness, Rockwell R                         | 120           | -                   | ASTM D 785  |
| Tensile Stress, yield, 50 mm/min             | 62            | MPa                 | ISO 527     |
| Tensile Stress, break, 50 mm/min             | 66            | MPa                 | ISO 527     |
| Tensile Strain, yield, 50 mm/min             | 6             | %                   | ISO 527     |
| Tensile Strain, break, 50 mm/min             | 124           | %                   | ISO 527     |
| Tensile Modulus, 1 mm/min                    | 2150          | MPa                 | ISO 527     |
| Flexural Stress, yield, 2 mm/min             | 90            | MPa                 | ISO 178     |
| Flexural Modulus, 2 mm/min                   | 2120          | MPa                 | ISO 178     |
| <b>IMPACT</b>                                |               |                     |             |
| Izod Impact, notched, 23°C                   | 90            | cm-kgf/cm           | ASTM D 256  |
| Izod Impact, notched, -10°C                  | 85            | cm-kgf/cm           | ASTM D 256  |
| Izod Impact, notched, -30°C                  | 14            | cm-kgf/cm           | ASTM D 256  |
| Multiaxial Impact                            | 1182          | cm-kgf              | ISO 6603    |
| Instrumented Impact Total Energy, 23°C       | 774           | cm-kgf              | ASTM D 3763 |
| Izod Impact, unnotched 80*10*3 +23°C         | NB            | kJ/m <sup>2</sup>   | ISO 180/1U  |



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| <b>IMPACT</b>                               |               |                   |                |
| Izod Impact, unnotched 80*10*3 -30°C        | NB            | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, notched 80*10*3 +23°C          | 67            | kJ/m <sup>2</sup> | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C          | 22            | kJ/m <sup>2</sup> | ISO 180/1A     |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm  | 79            | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 14            | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm  | NB            | kJ/m <sup>2</sup> | ISO 179/1eU    |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB            | kJ/m <sup>2</sup> | ISO 179/1eU    |
| <b>THERMAL</b>                              |               |                   |                |
| Vicat Softening Temp, Rate B/50             | 136           | °C                | ASTM D 1525    |
| HDT, 0.45 MPa, 3.2 mm, unannealed           | 123           | °C                | ASTM D 648     |
| HDT, 1.82 MPa, 3.2mm, unannealed            | 113           | °C                | ASTM D 648     |
| CTE, -40°C to 40°C, flow                    | 8.E-05        | 1/°C              | ASTM E 831     |
| CTE, -40°C to 40°C, xflow                   | 8.E-05        | 1/°C              | ASTM E 831     |
| CTE, -40°C to 40°C, flow                    | 8.E-05        | 1/°C              | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow                   | 8.E-05        | 1/°C              | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C           | PASS          | -                 | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50             | 129           | °C                | ISO 306        |
| Vicat Softening Temp, Rate B/120            | 130           | °C                | ISO 306        |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm       | 115           | °C                | ISO 75/Af      |
| <b>PHYSICAL</b>                             |               |                   |                |
| Specific Gravity                            | 1.2           | -                 | ASTM D 792     |
| Density                                     | 1.2           | g/cm <sup>3</sup> | ASTM D 792     |
| Mold Shrinkage, flow, 3.2 mm (5)            | 0.5 - 0.7     | %                 | SABIC Method   |
| Melt Flow Rate, 300°C/1.2 kgf               | 18            | g/10 min          | ASTM D 1238    |
| Density                                     | 1.2           | g/cm <sup>3</sup> | ISO 1183       |



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| <b>PHYSICAL</b>                       |               |                         |             |
| Water Absorption, (23°C/sat)          | 0.3           | %                       | ISO 62      |
| Moisture Absorption (23°C / 50% RH)   | 0.15          | %                       | ISO 62      |
| Melt Volume Rate, MVR at 300°C/1.2 kg | 17            | cm <sup>3</sup> /10 min | ISO 1133    |
| <b>OPTICAL</b>                        |               |                         |             |
| Light Transmission, 2.54 mm           | 88            | %                       | ASTM D 1003 |
| Haze, 2.54 mm                         | <1            | %                       | ASTM D 1003 |
| Refractive Index                      | 1.582         | -                       | ASTM D 542  |



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| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <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            | 295 - 315     | °C   |
| Nozzle Temperature          | 290 - 310     | °C   |
| Front - Zone 3 Temperature  | 295 - 315     | °C   |
| Middle - Zone 2 Temperature | 280 - 305     | °C   |
| Rear - Zone 1 Temperature   | 270 - 295     | °C   |
| Mold Temperature            | 70 - 95       | °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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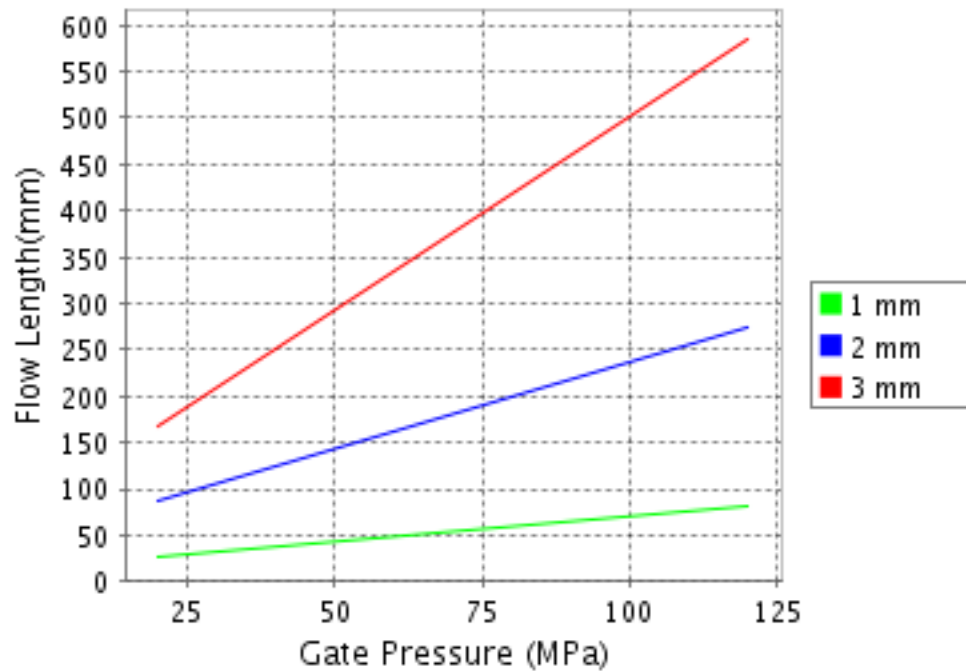
### CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

LEXAN® HFD1212

Melt Temperature : 305°C

Mold Temperature : 85°C



**Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.**

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