

# LEXAN™ COPOLYMER HFD1731

REGION ASIA

## DESCRIPTION

25 MFR LEXAN High Flow Ductile Copolymer UV-stabilized

## TYPICAL PROPERTY VALUES

Revision 20170913

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 59             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 60             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 6              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 132            | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                    | 2230           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 99             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2220           | MPa               | 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             | 65             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 123            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2180           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 90             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2180           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 812            | J/m               | ASTM D 256   |
| Izod Impact, notched, 0°C                    | 789            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 125            | J/m               | ASTM D 256   |
| Multiaxial Impact                            | 110            | J                 | ISO 6603     |
| Instrumented Impact Total Energy, 23°C       | 67             | J                 | ASTM D 3763  |
| Izod Impact, unnotched 80*10*3 +23°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U   |
| 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           | 64             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*3 -30°C           | 13             | kJ/m <sup>2</sup> | ISO 180/1A   |

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|---|----------------|-------------------------|----------------|
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm  | 73             | kJ/m <sup>2</sup>       | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 13             | 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             | 135            | °C                      | ASTM D 1525    |
| HDT, 0.45 MPa, 3.2 mm, unannealed           | 122            | °C                      | ASTM D 648     |
| HDT, 1.82 MPa, 3.2mm, unannealed            | 111            | °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               | 25             | g/10 min                | ASTM D 1238    |
| Density                                     | 1.2            | g/cm <sup>3</sup>       | ISO 1183       |
| 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       | 23             | 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 D542      |
| <b>INJECTION MOLDING</b>                    |                |                         |                |
| Drying Temperature                          | 105 – 110      | °C                      |                |
| Drying Time                                 | 3 – 4          | hrs                     |                |
| Drying Time (Cumulative)                    | 24             | hrs                     |                |
| Melt Temperature                            | 260 – 305      | °C                      |                |
| Nozzle Temperature                          | 255 – 300      | °C                      |                |
| Front - Zone 3 Temperature                  | 260 – 305      | °C                      |                |
| Middle - Zone 2 Temperature                 | 250 – 295      | °C                      |                |
| Rear - Zone 1 Temperature                   | 240 – 280      | °C                      |                |

| PROPERTIES            | TYPICAL VALUES | UNITS | TEST METHODS |
|-----------------------|----------------|-------|--------------|
| Mold Temperature      | 50 – 80        | °C    |              |
| Back Pressure         | 0.3 – 0.7      | MPa   |              |
| Screw Speed           | 35 – 75        | rpm   |              |
| Shot to Cylinder Size | 40 – 60        | %     |              |
| Vent Depth            | 0.038 – 0.076  | mm    |              |

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