

# LEXAN<sup>TM</sup> COPOLYMER HFD1830

REGION ASIA

## DESCRIPTION

40 MFR LEXAN High Flow Ductile Copolymer UV Stabilized

## TYPICAL PROPERTY VALUES

Revision 20191031

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 60             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 56             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 5.5            | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 130            | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                    | 2270           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 100            | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2240           | MPa               | ASTM D 790   |
| Hardness, Rockwell R                         | 120            | -                 | ASTM D 785   |
| Tensile Stress, yield, 50 mm/min             | 63             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 56             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 97             | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2180           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 91             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2180           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 728            | J/m               | ASTM D 256   |
| Izod Impact, notched, 0°C                    | 699            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 115            | J/m               | ASTM D 256   |
| Multiaxial Impact                            | 95             | J                 | ISO 6603     |
| Instrumented Impact Total Energy, 23°C       | 56             | 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           | 58             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*3 -30°C           | 11             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 64             | 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            | 121            | °C                | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 110            | °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   |

| PROPERTIES                                          | TYPICAL VALUES                    | UNITS                   | TEST METHODS   |
|-----------------------------------------------------|-----------------------------------|-------------------------|----------------|
| 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      |
| Relative Temp Index, Elec <sup>(1)</sup>            | 105                               | °C                      | UL 746B        |
| Relative Temp Index, Mech w/impact <sup>(1)</sup>   | 105                               | °C                      | UL 746B        |
| Relative Temp Index, Mech w/o impact <sup>(1)</sup> | 105                               | °C                      | UL 746B        |
| PHYSICAL                                            |                                   |                         |                |
| Specific Gravity                                    | 1.2                               | -                       | ASTM D 792     |
| Density                                             | 1.2                               | g/cm <sup>3</sup>       | ASTM D 792     |
| Mold Shrinkage, flow, 3.2 mm                        | 0.5 – 0.7                         | %                       | SABIC method   |
| Melt Flow Rate, 300°C/1.2 kgf                       | 40                                | 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               | 38                                | cm <sup>3</sup> /10 min | ISO 1133       |
| OPTICAL                                             |                                   |                         |                |
| Light Transmission, 2.54 mm                         | 88                                | %                       | ASTM D 1003    |
| Haze, 2.54 mm                                       | <1                                | %                       | ASTM D 1003    |
| Refractive Index                                    | 1.582                             | -                       | ASTM D542      |
| FLAME CHARACTERISTICS <sup>(1)</sup>                |                                   |                         |                |
| UL Yellow Card Link                                 | <a href="#">E207780-100910216</a> | -                       | -              |
| UL Recognized, 94V-2 Flame Class Rating             | ≥1                                | mm                      | UL 94          |
| UL Recognized, 94HB Flame Class Rating              | ≥0.5                              | mm                      | UL 94          |
| INJECTION MOLDING                                   |                                   |                         |                |
| 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                      |                |
| 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                      |                |

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.



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