

# LEXAN™ HFD1830 resin

Polycarbonate

SABIC Innovative Plastics

## Message:

40 MFR LEXAN High Flow Ductile Copolymer UV Stabilized, available in transparent colors only

| General Information                        |                   |                        |                     |
|--------------------------------------------|-------------------|------------------------|---------------------|
| UL YellowCard                              | E45329-100910217  |                        |                     |
| Additive                                   | UV stabilizer     |                        |                     |
| Features                                   | Copolymer         |                        |                     |
|                                            | High liquidity    |                        |                     |
|                                            | ductility         |                        |                     |
| RoHS Compliance                            | RoHS compliance   |                        |                     |
| Appearance                                 | Available colors  |                        |                     |
|                                            | Clear/transparent |                        |                     |
| Processing Method                          | Injection molding |                        |                     |
| Physical                                   | Nominal Value     | Unit                   | Test Method         |
| Specific Gravity                           | 1.20              | g/cm <sup>3</sup>      | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)   | 40                | g/10 min               | ASTM D1238          |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 38.0              | cm <sup>3</sup> /10min | ISO 1133            |
| Molding Shrinkage - Flow (3.20 mm)         | 0.50 - 0.70       | %                      | Internal method     |
| Water Absorption                           |                   |                        | ISO 62              |
| Saturated, 23°C                            | 0.30              | %                      | ISO 62              |
| Equilibrium, 23°C, 50% RH                  | 0.15              | %                      | ISO 62              |
| Hardness                                   | Nominal Value     | Unit                   | Test Method         |
| Rockwell Hardness (R-Scale)                | 120               |                        | ASTM D785           |
| Mechanical                                 | Nominal Value     | Unit                   | Test Method         |
| Tensile Modulus                            |                   |                        |                     |
| -- <sup>1</sup>                            | 2270              | MPa                    | ASTM D638           |
| --                                         | 2180              | MPa                    | ISO 527-2/1         |
| Tensile Strength                           |                   |                        |                     |
| Yield <sup>2</sup>                         | 60.0              | MPa                    | ASTM D638           |
| Yield                                      | 63.0              | MPa                    | ISO 527-2/50        |
| Fracture <sup>3</sup>                      | 56.0              | MPa                    | ASTM D638           |
| Fracture                                   | 56.0              | MPa                    | ISO 527-2/50        |
| Tensile Elongation                         |                   |                        |                     |
| Yield <sup>4</sup>                         | 5.5               | %                      | ASTM D638           |

|                                                |               |                   |                          |
|------------------------------------------------|---------------|-------------------|--------------------------|
| Yield                                          | 6.0           | %                 | ISO 527-2/50             |
| Fracture <sup>5</sup>                          | 130           | %                 | ASTM D638                |
| Fracture                                       | 97            | %                 | ISO 527-2/50             |
| Flexural Modulus                               |               |                   |                          |
| 50.0mm span <sup>6</sup>                       | 2240          | MPa               | ASTM D790                |
| -- <sup>7</sup>                                | 2180          | MPa               | ISO 178                  |
| Flexural Stress                                |               |                   |                          |
| --                                             | 91.0          | MPa               | ISO 178                  |
| Yield, 50.0mm span <sup>8</sup>                | 100           | MPa               | ASTM D790                |
| Impact                                         | Nominal Value | Unit              | Test Method              |
| Charpy Notched Impact Strength <sup>9</sup>    |               |                   | ISO 179/1eA              |
| -30°C                                          | 13            | kJ/m <sup>2</sup> | ISO 179/1eA              |
| 23°C                                           | 64            | kJ/m <sup>2</sup> | ISO 179/1eA              |
| Charpy Unnotched Impact Strength <sup>10</sup> |               |                   | ISO 179/1eU              |
| -30°C                                          | No Break      |                   | ISO 179/1eU              |
| 23°C                                           | No Break      |                   | ISO 179/1eU              |
| Notched Izod Impact                            |               |                   |                          |
| -30°C                                          | 120           | J/m               | ASTM D256                |
| 0°C                                            | 700           | J/m               | ASTM D256                |
| 23°C                                           | 730           | J/m               | ASTM D256                |
| -30°C <sup>11</sup>                            | 11            | kJ/m <sup>2</sup> | ISO 180/1A               |
| 23°C <sup>12</sup>                             | 58            | kJ/m <sup>2</sup> | ISO 180/1A               |
| Unnotched Izod Impact Strength <sup>13</sup>   |               |                   | ISO 180/1U               |
| -30°C                                          | No Break      |                   | ISO 180/1U               |
| 23°C                                           | No Break      |                   | ISO 180/1U               |
| Instrumented Dart Impact                       |               |                   |                          |
| 23°C, Total Energy                             | 56.0          | J                 | ASTM D3763               |
| --                                             | 95.0          | J                 | ISO 6603-2               |
| Thermal                                        | Nominal Value | Unit              | Test Method              |
| Deflection Temperature Under Load              |               |                   |                          |
| 0.45 MPa, unannealed, 3.20mm                   | 121           | °C                | ASTM D648                |
| 1.8 MPa, unannealed, 3.20mm                    | 110           | °C                | ASTM D648                |
| 1.8 MPa, unannealed, 64.0mm span <sup>14</sup> | 115           | °C                | ISO 75-2/Af              |
| Vicat Softening Temperature                    |               |                   |                          |
| --                                             | 135           | °C                | ASTM D1525 <sup>15</sup> |
| --                                             | 129           | °C                | ISO 306/B50              |
| --                                             | 130           | °C                | ISO 306/B120             |
| Ball Pressure Test (125°C)                     | Pass          |                   | IEC 60695-10-2           |
| Linear thermal expansion coefficient           |               |                   | ASTM E831, ISO 11359-2   |
| Flow: -40 to 40°C                              | 8.0E-5        | cm/cm/°C          | ASTM E831, ISO 11359-2   |
| Lateral: -40 to 40°C                           | 8.0E-5        | cm/cm/°C          | ASTM E831, ISO 11359-2   |
| Optical                                        | Nominal Value | Unit              | Test Method              |

| Refractive Index        | 1.582         |      | ASTM D542  |
|-------------------------|---------------|------|------------|
| Transmittance (2540 μm) | 88.0          | %    | ASTM D1003 |
| Haze (2540 μm)          | < 1.0         | %    | ASTM D1003 |
| Injection               | Nominal Value | Unit |            |
| Drying Temperature      | 104 - 110     | °C   |            |
| Drying Time             | 3.0 - 4.0     | hr   |            |
| Drying Time, Maximum    | 24            | hr   |            |
| Suggested Shot Size     | 40 - 60       | %    |            |
| Rear Temperature        | 238 - 282     | °C   |            |
| Middle Temperature      | 249 - 293     | °C   |            |
| Front Temperature       | 260 - 304     | °C   |            |
| Nozzle Temperature      | 254 - 299     | °C   |            |
| Processing (Melt) Temp  | 260 - 304     | °C   |            |
| Mold Temperature        | 48.9 - 82.2   | °C   |            |
| Back Pressure           | 0.345 - 0.689 | MPa  |            |
| Screw Speed             | 35 - 75       | rpm  |            |
| Vent Depth              | 0.038 - 0.076 | mm   |            |

#### NOTE

1. 5.0 mm/min
2. Type 1, 50mm/min
3. Type 1, 50mm/min
4. Type 1, 50mm/min
5. Type 1, 50mm/min
6. 1.3 mm/min
7. 2.0 mm/min
8. 1.3 mm/min
9. 80\*10\*3 sp=62mm
10. 80\*10\*3 sp=62mm
11. 80\*10\*3
12. 80\*10\*3
13. 80\*10\*3
14. 80\*10\*4 mm
15. 标准 B (120°C/h), 载荷2 (50N)

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