

# LEXAN™ HFD1212 resin

Polycarbonate

SABIC Innovative Plastics

Message:

18 MFR LEXAN High Flow Ductile Copolymer

| General Information                        |                   |                        |                     |
|--------------------------------------------|-------------------|------------------------|---------------------|
| UL YellowCard                              | E207780-100912744 |                        |                     |
| Features                                   | Copolymer         |                        |                     |
|                                            | High liquidity    |                        |                     |
|                                            | ductility         |                        |                     |
| 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)   | 18                | g/10 min               | ASTM D1238          |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 17.0              | 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>                            | 2240              | MPa                    | ASTM D638           |
| --                                         | 2150              | MPa                    | ISO 527-2/1         |
| Tensile Strength                           |                   |                        |                     |
| Yield <sup>2</sup>                         | 58.0              | MPa                    | ASTM D638           |
| Yield                                      | 62.0              | MPa                    | ISO 527-2/50        |
| Fracture <sup>3</sup>                      | 63.0              | MPa                    | ASTM D638           |
| Fracture                                   | 66.0              | MPa                    | ISO 527-2/50        |
| Tensile Elongation                         |                   |                        |                     |
| Yield <sup>4</sup>                         | 6.0               | %                      | ASTM D638           |
| Yield                                      | 6.0               | %                      | ISO 527-2/50        |
| Fracture <sup>5</sup>                      | 140               | %                      | ASTM D638           |
| Fracture                                   | 120               | %                      | ISO 527-2/50        |
| Flexural Modulus                           |                   |                        |                     |
| 50.0mm span <sup>6</sup>                   | 2220              | MPa                    | ASTM D790           |

|                                                |               |                   |                          |
|------------------------------------------------|---------------|-------------------|--------------------------|
| -- <sup>7</sup>                                | 2120          | MPa               | ISO 178                  |
| Flexural Stress                                |               |                   |                          |
| --                                             | 90.0          | MPa               | ISO 178                  |
| Yield, 50.0mm span <sup>8</sup>                | 98.0          | MPa               | ASTM D790                |
| Impact                                         | Nominal Value | Unit              | Test Method              |
| Charpy Notched Impact Strength <sup>9</sup>    |               |                   | ISO 179/1eA              |
| -30°C                                          | 14            | kJ/m <sup>2</sup> | ISO 179/1eA              |
| 23°C                                           | 79            | 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                                          | 150           | J/m               | ASTM D256                |
| -10°C                                          | 840           | J/m               | ASTM D256                |
| 23°C                                           | 890           | J/m               | ASTM D256                |
| -30°C <sup>11</sup>                            | 22            | kJ/m <sup>2</sup> | ISO 180/1A               |
| 23°C <sup>12</sup>                             | 67            | 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                             | 76.0          | J                 | ASTM D3763               |
| --                                             | 116           | J                 | ISO 6603-2               |
| Thermal                                        | Nominal Value | Unit              | Test Method              |
| Deflection Temperature Under Load              |               |                   |                          |
| 0.45 MPa, unannealed, 3.20mm                   | 123           | °C                | ASTM D648                |
| 1.8 MPa, unannealed, 3.20mm                    | 113           | °C                | ASTM D648                |
| 1.8 MPa, unannealed, 64.0mm span <sup>14</sup> | 115           | °C                | ISO 75-2/Af              |
| Vicat Softening Temperature                    |               |                   |                          |
| --                                             | 136           | °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                             | 121           | °C                |                          |

|                        |               |     |
|------------------------|---------------|-----|
| Drying Time            | 3.0 - 4.0     | hr  |
| Drying Time, Maximum   | 48            | hr  |
| Suggested Max Moisture | 0.020         | %   |
| Suggested Shot Size    | 40 - 60       | %   |
| Rear Temperature       | 271 - 293     | °C  |
| Middle Temperature     | 282 - 304     | °C  |
| Front Temperature      | 293 - 316     | °C  |
| Nozzle Temperature     | 288 - 310     | °C  |
| Processing (Melt) Temp | 293 - 316     | °C  |
| Mold Temperature       | 71.1 - 93.3   | °C  |
| Back Pressure          | 0.345 - 0.689 | MPa |
| Screw Speed            | 40 - 70       | rpm |
| Vent Depth             | 0.025 - 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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