

# LEXAN™ HFD4472 resin

Polycarbonate

SABIC Innovative Plastics Asia Pacific

## Message:

LEXAN HFD4472 is a 20% glass filled, medium flow, impact modified, injection moldable grade designed for high flow and superior surface appearance. HFD4472 has enhanced mold release, impact ductility and broad color space.

| General Information                                  |                                                       |                        |                     |
|------------------------------------------------------|-------------------------------------------------------|------------------------|---------------------|
| Filler / Reinforcement                               | Glass fiber reinforced material, 20% filler by weight |                        |                     |
| Additive                                             | Impact modifier<br>demoulding                         |                        |                     |
| Features                                             | Medium liquidity<br>Good appearance<br>ductility      |                        |                     |
| Processing Method                                    | Injection molding                                     |                        |                     |
| Physical                                             | Nominal Value                                         | Unit                   | Test Method         |
| Specific Gravity                                     | 1.33                                                  | g/cm <sup>3</sup>      | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)             | 10                                                    | g/10 min               | ASTM D1238          |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)           | 9.00                                                  | cm <sup>3</sup> /10min | ISO 1133            |
| Molding Shrinkage                                    |                                                       |                        | Internal method     |
| Flow: 3.20mm                                         | 0.20 - 0.30                                           | %                      | Internal method     |
| Transverse flow: 3.20mm                              | 0.40 - 0.50                                           | %                      | Internal method     |
| Water Absorption                                     |                                                       |                        | ISO 62              |
| Saturated, 23°C                                      | 0.12                                                  | %                      | ISO 62              |
| Equilibrium, 23°C, 50% RH                            | 0.040                                                 | %                      | ISO 62              |
| Mechanical                                           | Nominal Value                                         | Unit                   | Test Method         |
| Tensile Modulus <sup>1</sup>                         | 5500                                                  | MPa                    | ASTM D638           |
| Tensile Strength                                     |                                                       |                        |                     |
| Yield <sup>2</sup>                                   | 54.0                                                  | MPa                    | ASTM D638           |
| Yield                                                | 54.0                                                  | MPa                    | ISO 527-2/5         |
| Fracture <sup>3</sup>                                | 56.0                                                  | MPa                    | ASTM D638           |
| Fracture                                             | 56.0                                                  | MPa                    | ISO 527-2/5         |
| Tensile Elongation                                   |                                                       |                        |                     |
| Yield <sup>4</sup>                                   | 2.0                                                   | %                      | ASTM D638           |
| Fracture                                             | 2.0                                                   | %                      | ISO 527-2/5         |
| Flexural Modulus <sup>5</sup> (50.0 mm Span)         | 4900                                                  | MPa                    | ASTM D790           |
| Flexural Strength <sup>6</sup> (Yield, 50.0 mm Span) | 93.0                                                  | MPa                    | ASTM D790           |
| Impact                                               | Nominal Value                                         | Unit                   | Test Method         |

|                                               |               |                   |                 |
|-----------------------------------------------|---------------|-------------------|-----------------|
| Charpy Notched Impact Strength <sup>7</sup>   |               |                   | ISO 179/1eA     |
| -30°C                                         | 13            | kJ/m <sup>2</sup> | ISO 179/1eA     |
| 23°C                                          | 21            | kJ/m <sup>2</sup> | ISO 179/1eA     |
| Charpy Unnotched Impact Strength <sup>8</sup> |               |                   | ISO 179/1eU     |
| -30°C                                         | 59            | kJ/m <sup>2</sup> | ISO 179/1eU     |
| 23°C                                          | 59            | kJ/m <sup>2</sup> | ISO 179/1eU     |
| Notched Izod Impact                           |               |                   |                 |
| 23°C                                          | 190           | J/m               | ASTM D256       |
| -30°C <sup>9</sup>                            | 13            | kJ/m <sup>2</sup> | ISO 180/1A      |
| 23°C <sup>10</sup>                            | 18            | kJ/m <sup>2</sup> | ISO 180/1A      |
| Unnotched Izod Impact                         |               |                   |                 |
| 23°C                                          | 800           | J/m               | ASTM D4812      |
| -30°C <sup>11</sup>                           | 43            | kJ/m <sup>2</sup> | ISO 180/1U      |
| 23°C <sup>12</sup>                            | 47            | kJ/m <sup>2</sup> | ISO 180/1U      |
| Instrumented Dart Impact (23°C, Total Energy) | 30.0          | J                 | ASTM D3763      |
| Thermal                                       | Nominal Value | Unit              | Test Method     |
| Deflection Temperature Under Load             |               |                   | ASTM D648       |
| 0.45 MPa, unannealed, 3.20mm                  | 132           | °C                | ASTM D648       |
| 1.8 MPa, unannealed, 3.20mm                   | 128           | °C                | ASTM D648       |
| Vicat Softening Temperature                   | 135           | °C                | ISO 306/B120    |
| Ball Pressure Test (125°C)                    | Pass          |                   | IEC 60695-10-2  |
| Linear thermal expansion coefficient          |               |                   |                 |
| Flow: -40 to 40°C                             | 3.0E-5        | cm/cm/°C          | ASTM E831       |
| Flow: 23 to 80°C                              | 3.0E-5        | cm/cm/°C          | ISO 11359-2     |
| Lateral: -40 to 40°C                          | 8.0E-5        | cm/cm/°C          | ASTM E831       |
| Lateral: 23 to 80°C                           | 8.0E-5        | cm/cm/°C          | ISO 11359-2     |
| RTI Elec                                      | 80.0          | °C                | UL 746          |
| RTI Imp                                       | 80.0          | °C                | UL 746          |
| RTI                                           | 80.0          | °C                | UL 746          |
| Electrical                                    | Nominal Value |                   | Test Method     |
| Dielectric Constant (1.90 GHz)                | 3.16          |                   | Internal method |
| Dissipation Factor (1.90 GHz)                 | 9.9E-3        |                   | Internal method |
| Flammability                                  | Nominal Value |                   | Test Method     |
| Flame Rating (0.400 mm)                       | HB            |                   | UL 94           |
| 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                              | 266 - 288     | °C                |                 |

|                        |               |     |
|------------------------|---------------|-----|
| Middle Temperature     | 277 - 299     | °C  |
| Front Temperature      | 288 - 310     | °C  |
| Nozzle Temperature     | 282 - 304     | °C  |
| Processing (Melt) Temp | 288 - 310     | °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, 5.0 mm/min |
| 3.  | Type 1, 5.0 mm/min |
| 4.  | Type 1, 5.0 mm/min |
| 5.  | 1.3 mm/min         |
| 6.  | 1.3 mm/min         |
| 7.  | 80*10*3 sp=62mm    |
| 8.  | 80*10*3 sp=62mm    |
| 9.  | 80*10*3            |
| 10. | 80*10*3            |
| 11. | 80*10*3            |
| 12. | 80*10*3            |

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