

# ULTEM™ HU2300 resin

Polyether Imide

SABIC Innovative Plastics

## Message:

30% Glass fiber filled, standard flow Polyetherimide (Tg 217C). ECO Conforming. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant.

| General Information                      |                                  |                   |                     |
|------------------------------------------|----------------------------------|-------------------|---------------------|
| UL YellowCard                            | E121562-221099                   |                   |                     |
| Filler / Reinforcement                   | Glass Fiber,30% Filler by Weight |                   |                     |
| Features                                 | Biocompatible                    |                   |                     |
|                                          | ECO Compliant                    |                   |                     |
|                                          | Food Contact Acceptable          |                   |                     |
| Uses                                     | Medical/Healthcare Applications  |                   |                     |
|                                          | Pharmaceuticals                  |                   |                     |
| Agency Ratings                           | EU Eco                           |                   |                     |
|                                          | ISO 10993                        |                   |                     |
|                                          | USP Class VI                     |                   |                     |
| Processing Method                        | Injection Molding                |                   |                     |
| Physical                                 | Nominal Value                    | Unit              | Test Method         |
| Specific Gravity                         | 1.51                             | g/cm <sup>3</sup> | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) (337°C/6.6 kg) | 5.0                              | g/10 min          | ASTM D1238          |
| Molding Shrinkage - Flow (3.20 mm)       | 0.20 to 0.40                     | %                 | Internal Method     |
| Water Absorption                         |                                  |                   | ISO 62              |
| Saturation, 23°C                         | 0.90                             | %                 |                     |
| Equilibrium, 23°C, 50% RH                | 0.50                             | %                 |                     |
| Mechanical                               | Nominal Value                    | Unit              | Test Method         |
| Tensile Modulus                          |                                  |                   |                     |
| -- <sup>1</sup>                          | 9310                             | MPa               | ASTM D638           |
| --                                       | 9500                             | MPa               | ISO 527-2/1         |
| Tensile Strength                         |                                  |                   |                     |
| Yield <sup>2</sup>                       | 169                              | MPa               | ASTM D638           |
| Yield                                    | 165                              | MPa               | ISO 527-2/5         |
| Break <sup>3</sup>                       | 159                              | MPa               | ASTM D638           |
| Break                                    | 165                              | MPa               | ISO 527-2/5         |
| Tensile Elongation                       |                                  |                   |                     |
| Yield <sup>4</sup>                       | 3.0                              | %                 | ASTM D638           |

|                                                    |               |                   |                          |
|----------------------------------------------------|---------------|-------------------|--------------------------|
| Yield                                              | 2.0           | %                 | ISO 527-2/5              |
| Break <sup>5</sup>                                 | 3.0           | %                 | ASTM D638                |
| Break                                              | 2.0           | %                 | ISO 527-2/5              |
| Flexural Modulus                                   |               |                   |                          |
| 50.0 mm Span <sup>6</sup>                          | 9250          | MPa               | ASTM D790                |
| -- <sup>7</sup>                                    | 8500          | MPa               | ISO 178                  |
| Flexural Stress                                    |               |                   |                          |
| --                                                 | 225           | MPa               | ISO 178                  |
| Yield, 50.0 mm Span <sup>8</sup>                   | 220           | MPa               | ASTM D790                |
| Impact                                             | Nominal Value | Unit              | Test Method              |
| Charpy Notched Impact Strength <sup>9</sup> (23°C) | 10            | kJ/m <sup>2</sup> | ISO 179/1eA              |
| Notched Izod Impact                                |               |                   |                          |
| -30°C                                              | 90            | J/m               | ASTM D256                |
| 23°C                                               | 85            | J/m               | ASTM D256                |
| -30°C <sup>10</sup>                                | 10            | kJ/m <sup>2</sup> | ISO 180/1A               |
| 23°C <sup>11</sup>                                 | 10            | kJ/m <sup>2</sup> | ISO 180/1A               |
| Unnotched Izod Impact (23°C)                       | 430           | J/m               | ASTM D4812               |
| Instrumented Dart Impact (23°C, Total Energy)      | 10.0          | J                 | ASTM D3763               |
| Thermal                                            | Nominal Value | Unit              | Test Method              |
| Deflection Temperature Under Load                  |               |                   |                          |
| 1.8 MPa, Unannealed, 6.40 mm                       | 210           | °C                | ASTM D648                |
| 1.8 MPa, Unannealed, 64.0 mm Span <sup>12</sup>    | 210           | °C                | ISO 75-2/Af              |
| Vicat Softening Temperature                        |               |                   |                          |
| --                                                 | 228           | °C                | ASTM D1525 <sup>13</sup> |
| --                                                 | 213           | °C                | ISO 306/B50              |
| --                                                 | 220           | °C                | ISO 306/B120             |
| CLTE                                               |               |                   |                          |
| Flow : -20 to 150°C                                | 2.0E-5        | cm/cm/°C          | ASTM E831                |
| Flow : -40 to 40°C                                 | 1.6E-5        | cm/cm/°C          | ISO 11359-2              |
| Transverse : -40 to 40°C                           | 1.6E-5        | cm/cm/°C          | ASTM E831                |
| Transverse : -40 to 40°C                           | 4.1E-5        | cm/cm/°C          | ISO 11359-2              |
| Injection                                          | Nominal Value | Unit              |                          |
| Drying Temperature                                 | 149           | °C                |                          |
| Drying Time                                        | 4.0 to 6.0    | hr                |                          |
| Drying Time, Maximum                               | 24            | hr                |                          |
| Suggested Max Moisture                             | 0.020         | %                 |                          |
| Suggested Shot Size                                | 40 to 60      | %                 |                          |
| Rear Temperature                                   | 332 to 399    | °C                |                          |
| Middle Temperature                                 | 338 to 399    | °C                |                          |
| Front Temperature                                  | 343 to 399    | °C                |                          |
| Nozzle Temperature                                 | 343 to 399    | °C                |                          |

|                        |                |     |
|------------------------|----------------|-----|
| Processing (Melt) Temp | 349 to 399     | °C  |
| Mold Temperature       | 135 to 163     | °C  |
| Back Pressure          | 0.345 to 0.689 | MPa |
| Screw Speed            | 40 to 70       | rpm |
| Vent Depth             | 0.025 to 0.076 | mm  |

#### NOTE

|     |                                    |
|-----|------------------------------------|
| 1.  | 5.0 mm/min                         |
| 2.  | Type I, 5.0 mm/min                 |
| 3.  | Type I, 5.0 mm/min                 |
| 4.  | Type I, 5.0 mm/min                 |
| 5.  | Type I, 5.0 mm/min                 |
| 6.  | 1.3 mm/min                         |
| 7.  | 2.0 mm/min                         |
| 8.  | 1.3 mm/min                         |
| 9.  | 80*10*4 sp=62mm                    |
| 10. | 80*10*4                            |
| 11. | 80*10*4                            |
| 12. | 80*10*4 mm                         |
| 13. | Rate B (120°C/h), Loading 2 (50 N) |

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