

# ULTEM™ DT1810EV resin

Polyether Imide  
SABIC Innovative Plastics

Message:  
Improved ductility, transparent, enhanced flow Polyetherimide blend (Tg 200C) with internal mold release and enhanced ductility. ECO Conforming, UL94 V0 listed.

| General Information                        |                   |           |                     |
|--------------------------------------------|-------------------|-----------|---------------------|
| UL YellowCard                              | E121562-640471    |           |                     |
| Additive                                   | Mold Release      |           |                     |
| Features                                   | Ductile           |           |                     |
|                                            | ECO Compliant     |           |                     |
|                                            | Good Flow         |           |                     |
| Agency Ratings                             | EU Eco            |           |                     |
| Appearance                                 | Clear/Transparent |           |                     |
| Processing Method                          | Injection Molding |           |                     |
| Physical                                   | Nominal Value     | Unit      | Test Method         |
| Specific Gravity                           | 1.28              | g/cm³     | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)   | 43                | g/10 min  | ASTM D1238          |
| Melt Volume-Flow Rate (MVR) (360°C/5.0 kg) | 56.0              | cm³/10min | ISO 1133            |
| Molding Shrinkage - Flow (3.20 mm)         | 0.50 to 0.70      | %         | Internal Method     |
| Water Absorption                           |                   |           | ISO 62              |
| Saturation, 23°C                           | 0.36              | %         |                     |
| Equilibrium, 23°C, 50% RH                  | 0.080             | %         |                     |
| Mechanical                                 | Nominal Value     | Unit      | Test Method         |
| Tensile Modulus                            |                   |           |                     |
| -- <sup>1</sup>                            | 3210              | MPa       | ASTM D638           |
| --                                         | 2500              | MPa       | ISO 527-2/1         |
| Tensile Strength                           |                   |           |                     |
| Yield <sup>2</sup>                         | 103               | MPa       | ASTM D638           |
| Yield                                      | 98.0              | MPa       | ISO 527-2/5         |
| Break <sup>3</sup>                         | 85.0              | MPa       | ASTM D638           |
| Break                                      | 80.0              | MPa       | ISO 527-2/5         |
| Tensile Elongation                         |                   |           |                     |
| Yield <sup>4</sup>                         | 7.0               | %         | ASTM D638           |
| Yield                                      | 7.0               | %         | ISO 527-2/5         |
| Break <sup>5</sup>                         | 80                | %         | ASTM D638           |
| Break                                      | 80                | %         | ISO 527-2/5         |
| Flexural Modulus                           |                   |           |                     |

| 50.0 mm Span <sup>6</sup>                          | 3320          | MPa               | ASTM D790                             |
|----------------------------------------------------|---------------|-------------------|---------------------------------------|
| -- <sup>7</sup>                                    | 3100          | MPa               | ISO 178                               |
| Flexural Stress                                    |               |                   |                                       |
| --                                                 | 135           | MPa               | ISO 178                               |
| Yield, 50.0 mm Span <sup>8</sup>                   | 145           | MPa               | ASTM D790                             |
| Impact                                             | Nominal Value | Unit              | Test Method                           |
| Charpy Notched Impact Strength <sup>9</sup> (23°C) | 2.0           | kJ/m <sup>2</sup> | ISO 179/1eA                           |
| Notched Izod Impact                                |               |                   |                                       |
| -30°C                                              | 35            | J/m               | ASTM D256                             |
| 23°C                                               | 32            | J/m               | ASTM D256                             |
| -30°C <sup>10</sup>                                | 2.0           | kJ/m <sup>2</sup> | ISO 180/1A                            |
| 23°C <sup>11</sup>                                 | 2.0           | kJ/m <sup>2</sup> | ISO 180/1A                            |
| Unnotched Izod Impact                              |               |                   | ASTM D4812                            |
| -30°C                                              | No Break      |                   |                                       |
| 23°C                                               | No Break      |                   |                                       |
| Instrumented Dart Impact (23°C, Total Energy)      | 48.0          | J                 | ASTM D3763                            |
| Thermal                                            | Nominal Value | Unit              | Test Method                           |
| Deflection Temperature Under Load                  |               |                   |                                       |
| 1.8 MPa, Unannealed, 3.20 mm                       | 173           | °C                | ASTM D648                             |
| 1.8 MPa, Unannealed, 6.40 mm                       | 178           | °C                | ASTM D648                             |
| 1.8 MPa, Unannealed, 100 mm Span <sup>12</sup>     | 168           | °C                | ISO 75-2/Ae                           |
| Vicat Softening Temperature                        |               |                   |                                       |
| --                                                 | 192           | °C                | ASTM D1525, ISO 306/B50 <sup>13</sup> |
| --                                                 | 195           | °C                | ISO 306/B120                          |
| CLTE                                               |               |                   |                                       |
| Flow : -40 to 150°C                                | 6.0E-5        | cm/cm/°C          | ASTM E831                             |
| Flow : 23 to 150°C                                 | 5.5E-5        | cm/cm/°C          | ISO 11359-2                           |
| Transverse : -40 to 150°C                          | 6.0E-5        | cm/cm/°C          | ASTM E831                             |
| Transverse : 23 to 150°C                           | 5.5E-5        | cm/cm/°C          | ISO 11359-2                           |
| Injection                                          | Nominal Value | Unit              |                                       |
| Drying Temperature                                 | 135           | °C                |                                       |
| Drying Time                                        | 4.0 to 6.0    | hr                |                                       |
| Drying Time, Maximum                               | 12            | hr                |                                       |
| Suggested Max Moisture                             | 0.020         | %                 |                                       |
| Suggested Shot Size                                | 40 to 60      | %                 |                                       |
| Rear Temperature                                   | 310 to 332    | °C                |                                       |
| Middle Temperature                                 | 321 to 343    | °C                |                                       |
| Front Temperature                                  | 332 to 354    | °C                |                                       |
| Nozzle Temperature                                 | 327 to 349    | °C                |                                       |
| Processing (Melt) Temp                             | 332 to 354    | °C                |                                       |
| Mold Temperature                                   | 93.3 to 135   | °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. | 120*10*4 mm                        |
| 13. | Rate B (120°C/h), Loading 2 (50 N) |

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