

Ultem* Resin 1000

Europe-Africa-Middle East: COMMERCIAL

Transparent, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing. US FDA and EU Food Contact compliant, NSF 51 listing, compliant in recognized colors. Effective June, 2007 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU1000.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------|----------------|
| MECHANICAL | | | |
| Taber Abrasion, CS-17, 1 kg | 10 | mg/1000cy | SABIC Method |
| Tensile Stress, yield, 50 mm/min | 105 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 85 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 6 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 60 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 3200 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 160 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 3300 | MPa | ISO 178 |
| Hardness, H358/30 | 140 | MPa | ISO 2039-1 |
| IMPACT | | | |
| Izod Impact, unnotched 80*10*4 +23°C | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80*10*4 +23°C | 6 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 6 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 4 | kJ/m ² | ISO 179/1eA |
| Charpy Impact, notched, 23°C | 10 | kJ/m ² | ISO 179/2C |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 4 | kJ/m ² | ISO 179/1eA |
| THERMAL | | | |
| Thermal Conductivity | 0.24 | W/m-°C | ISO 8302 |
| CTE, 23°C to 150°C, flow | 5.E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 150°C, xflow | 5.E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, 125°C +/- 2°C | PASSES | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate A/50 | 215 | °C | ISO 306 |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.

3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update: 11/06/2000

PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR AVAILABILITY IN YOUR AREA. All information, recommendation or advice given by SABIC Innovative Plastics IP BV, or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedures in effect. Each user of the products shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its own particular purpose. Because actual use of the products by the user is beyond the control of SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates, such use is in the exclusive responsibility of the user. SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates cannot be held responsible respectively liable for any loss incurred through incorrect or faulty use of the products. Information, recommendations and/or advice are neither made to infringe on any patents, nor to grant a license under any patent or intellectual property right of SABIC INNOVATIVE PLASTICS HOLDING BV or any of its subsidiaries or affiliated companies, nor to grant the right to file for any patent protection.

* Ultem is a trademark of SABIC INNOVATIVE PLASTICS HOLDING BV

© 1997-2008 SABIC INNOVATIVE PLASTICS HOLDING BV. All rights reserved

Ultem* Resin 1000

Europe-Africa-Middle East: COMMERCIAL

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------------|--------------|
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 211 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 212 | °C | ISO 306 |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 200 | °C | ISO 75/Be |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 190 | °C | ISO 75/Ae |
| Relative Temp Index, Elec | 170 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 170 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 170 | °C | UL 746B |
| PHYSICAL | | | |
| Mold Shrinkage on Tensile Bar, flow (2) | 0.5 - 0.7 | % | SABIC Method |
| Density | 1.27 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 1.25 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.7 | % | ISO 62 |
| Melt Volume Rate, MVR at 360°C/5.0 kg | 13 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Volume Resistivity | 1.E+15 | Ohm-cm | IEC 60093 |
| Surface Resistivity, ROA | >1.E+15 | Ohm | IEC 60093 |
| Dielectric Strength, in oil, 0.8 mm | 33 | kV/mm | IEC 60243-1 |
| Dielectric Strength, in oil, 1.6 mm | 25 | kV/mm | IEC 60243-1 |
| Dielectric Strength, in oil, 3.2 mm | 16 | kV/mm | IEC 60243-1 |
| Relative Permittivity, 50/60 Hz | 2.9 | - | IEC 60250 |
| Relative Permittivity, 1 MHz | 2.9 | - | IEC 60250 |
| Dissipation Factor, 50/60 Hz | 0 | - | IEC 60250 |
| Dissipation Factor, 1 MHz | 0.006 | - | IEC 60250 |
| Dissipation Factor, 2450 MHz | 0.002 | - | IEC 60250 |
| Comparative Tracking Index | 150 | V | IEC 60112 |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties, except the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.

3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update:11/06/2000

PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR AVAILABILITY IN YOUR AREA All information, recommendation or advice given by SABIC INNOVATIVE PLASTICS HOLDING BV, or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedures in effect. Each user of the products shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its own particular purpose. Because actual use of the products by the user is beyond the control of SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates, such use is in the exclusive responsibility of the user. SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates cannot be held responsible respectively liable for any loss incurred through incorrect or faulty use of the products. Information, recommendations and/or advice are neither made to infringe on any patents, nor to grant a license under any patent or intellectual property right of SABIC INNOVATIVE PLASTICS HOLDING BV or any of its subsidiaries or affiliated companies, nor to grant the right to file for any patent protection

* Ultem is a trademark of SABIC Innovative Plastics IP BV

© 1997-2008 SABIC Innovative Plastics IP BV. All rights reserved

Ultem* Resin 1000

Europe-Africa-Middle East: COMMERCIAL

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|------|----------------|
| ELECTRICAL | | | |
| Comparative Tracking Index, M | 100 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| Glow Wire Flammability Index 960°C, passes at | 3.2 | mm | IEC 60695-2-12 |
| Oxygen Index (LOI) | 47 | % | ISO 4589 |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
4) Own measurement according to UL.

Source, GMD, Last Update: 11/06/2000

PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR AVAILABILITY IN YOUR AREA. All information, recommendation or advice given by SABIC INNOVATIVE PLASTICS HOLDING BV, or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedures in effect. Each user of the products shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its own particular purpose. Because actual use of the products by the user is beyond the control of SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates, such use is in the exclusive responsibility of the user. SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates cannot be held responsible respectively liable for any loss incurred through incorrect or faulty use of the products. Information, recommendations and/or advice are neither made to infringe on any patents, nor to grant a license under any patent or intellectual property right of SABIC INNOVATIVE PLASTICS HOLDING BV or any of its subsidiaries or affiliated companies, nor to grant the right to file for any patent protection.

* Ultem is a trademark of SABIC Innovative Plastics IP BV

© 1997-2008 SABIC Innovative Plastics IP BV. All rights reserved

Ultem* Resin 1000

Europe-Africa-Middle East: COMMERCIAL

| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 150 | °C |
| Drying Time | 4 - 6 | hrs |
| Maximum Moisture Content | 0.02 | % |
| Melt Temperature | 370 - 410 | °C |
| Nozzle Temperature | 350 - 405 | °C |
| Front - Zone 3 Temperature | 360 - 415 | °C |
| Middle - Zone 2 Temperature | 350 - 405 | °C |
| Rear - Zone 1 Temperature | 340 - 395 | °C |
| Hopper Temperature | 80 - 120 | °C |
| Mold Temperature | 140 - 180 | °C |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties, except the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
4) Own measurement according to UL.

Source, GMD, Last Update: 11/06/2000

PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR AVAILABILITY IN YOUR AREA. All information, recommendation or advice given by SABIC INNOVATIVE PLASTICS HOLDING BV, or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedures in effect. Each user of the products shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its own particular purpose. Because actual use of the products by the user is beyond the control of SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates, such use is in the exclusive responsibility of the user. SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates cannot be held responsible respectively liable for any loss incurred through incorrect or faulty use of the products. Information, recommendations and/or advice are neither made to infringe on any patents, nor to grant a license under any patent or intellectual property right of SABIC INNOVATIVE PLASTICS HOLDING BV or any of its subsidiaries or affiliated companies, nor to grant the right to file for any patent protection.

* Ultem is a trademark of SABIC Innovative Plastics IP BV

© 1997-2008 SABIC Innovative Plastics IP BV. All rights reserved

Ultem* Resin 1000

Europe-Africa-Middle East: COMMERCIAL

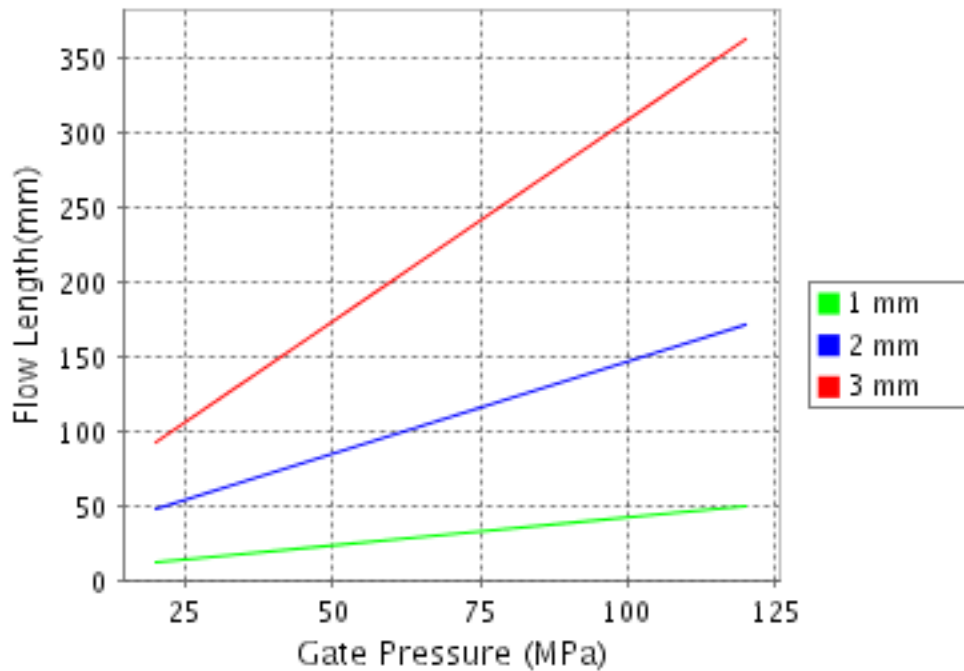
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

Ultem® 1000

Melt Temperature : 380°C

Mold Temperature : 160°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

® Moldflow is a registered trademark of the Moldflow Corporation.

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
4) Own measurement according to UL.

Source, GMD, Last Update: 11/06/2000

PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR AVAILABILITY IN YOUR AREA. All information, recommendation or advice given by SABIC INNOVATIVE PLASTICS HOLDING BV, or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedures in effect. Each user of the products shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the products supplied for its own particular purpose. Because actual use of the products by the user is beyond the control of SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates, such use is in the exclusive responsibility of the user. SABIC INNOVATIVE PLASTICS HOLDING BV, its subsidiaries and affiliates cannot be held responsible respectively liable for any loss incurred through incorrect or faulty use of the products. Information, recommendations and/or advice are neither made to infringe on any patents, nor to grant a license under any patent or intellectual property right of SABIC INNOVATIVE PLASTICS HOLDING BV or any of its subsidiaries or affiliated companies, nor to grant the right to file for any patent protection.

* Ultem is a trademark of SABIC Innovative Plastics IP BV

© 1997-2008 SABIC Innovative Plastics IP BV. All rights reserved