# ULTEM™ RESIN 4001

REGION ASIA

## DESCRIPTION

PTFE filled, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing.

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Consumer | Personal Accessory, Home Appliances, Personal Recreation, Commercial Appliance |
| Electrical and Electronics | Electrical Devices and Displays, Electrical Components and Infrastructure |
| Industrial | Electronic Material Handling, Electronic Material |
| Packaging | Food & Beverage |

## TYPICAL PROPERTY VALUES

Revision 20190925

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **MECHANICAL** | | | |
| Tensile Stress, yld, Type I, 5 mm/min | 103 | MPa | ASTM D 638 |
| Tensile Strain, brk, Type I, 5 mm/min | 40 | % | ASTM D 638 |
| Tensile Modulus, 5 mm/min | 3350 | MPa | ASTM D 638 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 151 | MPa | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 3400 | MPa | ASTM D 790 |
| Hardness, Rockwell M | 110 | - | ASTM D 785 |
| Taber Abrasion, CS-17, 1 kg | 2 | mg/1000cy | ASTM D 1044 |
| PV Limit, 0.51 m/s | 1.9 | MPa-m/s | SABIC method |
| K-factor xE-10, PV=2000 psi-fpm vs Steel | 72 | - | SABIC method |
| K-factor xE-10, PV=2000 psi-fpm vs Self | 27 | - | SABIC method |
| Coefficient of Friction on steel,Kinetic | 0.25 | - | ASTM D 1894 |
| **IMPACT** | | | |
| Izod Impact, unnotched, 23°C | 534 | J/m | ASTM D 4812 |
| Izod Impact, notched, 23°C | 117 | J/m | ASTM D 256 |
| Izod Impact, Reverse Notched, 3.2 mm | 1281 | J/m | ASTM D 256 |
| **THERMAL** | | | |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 200 | °C | ASTM D 648 |
| Relative Temp Index, Elec [1] | 170 | °C | UL 746B |
| Relative Temp Index, Mech w/impact [1] | 170 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact [1] | 170 | °C | UL 746B |
| **PHYSICAL** | | | |
| Specific Gravity | 1.33 | - | ASTM D 792 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.7 | % | SABIC method |
| Melt Flow Rate, 337°C/6.6 kgf | 9.5 | g/10 min | ASTM D 1238 |
| **ELECTRICAL** | | | |
| Comparative Tracking Index (UL) {PLC} | 4 | PLC Code | UL 746A |
| Hot-Wire Ignition (HWI), PLC 1 | ≥0.38 | mm | UL 746A |
| High Amp Arc Ignition (HAI), PLC 0 | ≥1.6 | mm | UL 746A |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| High Amp Arc Ignition (HAI), PLC 1 | ≥0.38 | mm | UL 746A |
| High Voltage Arc Track Rate {PLC} | 2 | PLC Code | UL 746A |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| FLAME CHARACTERISTICS [1] | | | |
| UL Yellow Card Link | E207780-102879758 | - | - |
| UL Recognized, 94-5VA Flame Class Rating | ≥1.5 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating | ≥0.38 | mm | UL 94 |
| INJECTION MOLDING | | | |
| Drying Temperature | 135 | °C | |
| Drying Time | 4 – 6 | hrs | |
| Drying Time (Cumulative) | 10 | hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 350 – 370 | °C | |
| Nozzle Temperature | 350 – 370 | °C | |
| Front - Zone 3 Temperature | 350 – 370 | °C | |
| Middle - Zone 2 Temperature | 345 – 365 | °C | |
| Rear - Zone 1 Temperature | 340 – 360 | °C | |
| Mold Temperature | 135 – 165 | °C | |
| Back Pressure | 0.3 – 0.7 | MPa | |
| Screw Speed | 40 – 70 | rpm | |
| Shot to Cylinder Size | 40 – 60 | % | |
| Vent Depth | 0.025 – 0.076 | mm | |

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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