

ULTEM™ RESIN 4001

REGION EUROPE

DESCRIPTION

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

TYPICAL PROPERTY VALUES

Revision 20180524

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------|----------------|
| MECHANICAL | | | |
| Taber Abrasion, CS-17, 1 kg | 2 | mg/1000cy | SABIC method |
| PV Limit, 0.51 m/s | 1.9 | MPa-m/s | SABIC method |
| Tensile Stress, yield, 50 mm/min | 95 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 75 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 6 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 30 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 3000 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 125 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 3000 | MPa | ISO 178 |
| Hardness, H358/30 | 130 | MPa | ISO 2039-1 |
| IMPACT | | | |
| Izod Impact, notched 80*10*4 +23°C | 10 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 8 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 11 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 9 | kJ/m ² | ISO 179/1eA |
| THERMAL | | | |
| Thermal Conductivity | 0.26 | W/m-°C | ISO 8302 |
| CTE, 23°C to 150°C, flow | 3.9E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 150°C, xflow | 4.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 |
| Vicat Softening Temp, Rate B/50 | 208 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 210 | °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 |
| PHYSICAL | | | |
| Mold Shrinkage on Tensile Bar, flow (2) (5) | 0.6 – 0.8 | % | SABIC method |

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|---|----------------|-------------------------|-------------------|
| Density | 1.33 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 1.1 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.6 | % | 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 |
| Comparative Tracking Index | 150 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| UL Compliant, 94V-1 Flame Class Rating (3)(4) | 1.6 | mm | UL 94 by SABIC-IP |
| UL Compliant, 94-5VA Rating (3)(4) | 1.5 | mm | UL 94 by SABIC-IP |
| Glow Wire Flammability Index 960°C, passes at | 3.2 | mm | IEC 60695-2-12 |
| Oxygen Index (LOI) | 48 | % | ISO 4589 |
| 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 | |

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