

ULTEM™ RESIN MD182

DESCRIPTION

Transparent high flow Polyetherimide (Tg 217C)

| INDUSTRY | SUB INDUSTRY |
|------------|---------------------------|
| Automotive | Automotive Under the Hood |

TYPICAL PROPERTY VALUES

Revision 20240802

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|----------------|-------------------|--------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 5 mm/min | 110 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 5 mm/min | 105 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 5 mm/min | 7 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 5 mm/min | 60 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 3350 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 165 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 3400 | MPa | ASTM D790 |
| Tensile Stress, yield, 5 mm/min | 105 | MPa | ISO 527 |
| Tensile Stress, break, 5 mm/min | 85 | MPa | ISO 527 |
| Tensile Strain, yield, 5 mm/min | 6 | % | ISO 527 |
| Tensile Strain, break, 5 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 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | 1400 | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 32 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 50 | J/m | ASTM D256 |
| Izod Impact, unnotched 80*10*4 +23°C | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80*10*4 +23°C | 5 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 5 | kJ/m ² | ISO 180/1A |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 219 | °C | ASTM D1525 |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 205 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 197 | °C | ASTM D648 |
| CTE, -40°C to 150°C, flow | 5.5E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 150°C, xflow | 5.5E-05 | 1/°C | ASTM E831 |
| CTE, 23°C to 150°C, flow | 5E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 150°C, xflow | 5E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/120 | 212 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 193 | °C | ISO 75/Af |
| PHYSICAL | | | |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---------------------------------------|----------------|-------------------------|--------------|
| Specific Gravity | 1.27 | - | ASTM D792 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.7 | % | SABIC method |
| Melt Flow Rate, 337°C/6.7 kgf | 17.8 | g/10 min | ASTM D1238 |
| Density | 1.27 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 1.25 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.7 | % | ISO 62 |
| Melt Volume Rate, MVR at 360°C/5.0 kg | 25 | cm ³ /10 min | ISO 1133 |
| INJECTION MOLDING | | | |
| Drying Temperature | 150 | °C | |
| Drying Time | 4 – 6 | Hrs | |
| Drying Time (Cumulative) | 24 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 350 – 410 | °C | |
| Nozzle Temperature | 345 – 405 | °C | |
| Front - Zone 3 Temperature | 345 – 410 | °C | |
| Middle - Zone 2 Temperature | 340 – 405 | °C | |
| Rear - Zone 1 Temperature | 330 – 400 | °C | |
| Mold Temperature | 135 – 180 | °C | |
| Back Pressure | 0.3 – 0.7 | MPa | |
| Screw speed (Circumferential speed) | 0.2 – 0.3 | m/s | |
| Shot to Cylinder Size | 40 – 60 | % | |
| Vent Depth | 0.025 – 0.076 | mm | |

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