

# ULTEM™ RESIN MD130

REGION ASIA

## DESCRIPTION

Transparent, standard flow Polyetherimide (Tg 217°C). ECO Conforming. US FDA and EU Food Contact compliant.

## TYPICAL PROPERTY VALUES

Revision 20230607

| 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         | 90             | 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                     | 3580           | MPa       | ASTM D638    |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span  | 160            | MPa       | ASTM D790    |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 165            | MPa       | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span      | 3550           | MPa       | ASTM D790    |
| Flexural Modulus, 2.6 mm/min, 100 mm span     | 3510           | MPa       | ASTM D790    |
| 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      |
| Ball Indentation Hardness, H358/30            | 140            | MPa       | ISO 2039-1   |
| IMPACT                                        |                |           |              |
| Izod Impact, unnotched, 23°C                  | 1335           | J/m       | ASTM D4812   |
| Izod Impact, notched, 23°C                    | 53             | J/m       | ASTM D256    |
| Izod Impact, notched, -30°C                   | 55             | J/m       | ASTM D256    |
| Izod Impact, Reverse Notched, 3.2 mm          | 1335           | J/m       | ASTM D256    |
| Gardner, 23°C                                 | 36             | J         | ASTM D3029   |
| Instrumented Dart Impact Total Energy, 23°C   | 38             | J         | ASTM D3763   |
| Izod Impact, unnotched 80*10*4 +23°C          | NB             | kJ/m²     | ISO 180/1U   |
| Izod Impact, unnotched 80*10*4 -30°C          | NB             | kJ/m²     | ISO 180/1U   |
| Izod Impact, notched 80*10*4 +23°C            | 6              | kJ/m²     | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C            | 6              | kJ/m²     | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm    | 4              | kJ/m²     | ISO 179/1eA  |
| Charpy Impact, notched, 23°C                  | 10             | kJ/m²     | ISO 179/2C   |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm   | 4              | kJ/m²     | ISO 179/1eA  |
| THERMAL                                       |                |           |              |
| Vicat Softening Temp, Rate B/50               | 218            | °C        | ASTM D1525   |
| HDT, 1.82 MPa, 3.2mm, unannealed              | 208            | °C        | ASTM D648    |

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| PROPERTIES                              | TYPICAL VALUES | UNITS      | TEST METHODS   |
|-----------------------------------------|----------------|------------|----------------|
| CTE, -20°C to 150°C, flow               | 5.58E-05       | 1/°C       | ASTM E831      |
| CTE, -20°C to 150°C, xflow              | 5.4E-05        | 1/°C       | ASTM E831      |
| Thermal Conductivity                    | 0.22           | W/m·°C     | ASTM C177      |
| 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        |
| 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      |
| <b>PHYSICAL</b>                         |                |            |                |
| Specific Gravity                        | 1.27           | -          | ASTM D792      |
| Water Absorption, (23°C/24hrs)          | 0.25           | %          | ASTM D570      |
| Water Absorption, (23°C/Saturated)      | 1.25           | %          | ASTM D570      |
| Mold Shrinkage on Tensile Bar, flow     | 0.5 – 0.7      | %          | SABIC method   |
| Mold Shrinkage, flow, 3.2 mm            | 0.5 – 0.7      | %          | SABIC method   |
| Melt Flow Rate, 337°C/6.6 kgf           | 9              | g/10 min   | ASTM D1238     |
| Poisson's Ratio                         | 0.3            | -          | ASTM E132      |
| Density                                 | 1.27           | g/cm³      | 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   | 13             | cm³/10 min | ISO 1133       |
| <b>ELECTRICAL</b>                       |                |            |                |
| Volume Resistivity                      | 1.E+17         | Ω.cm       | ASTM D257      |
| Dielectric Strength, in air, 1.6 mm     | 32.7           | kV/mm      | ASTM D149      |
| Dielectric Strength, in oil, 1.6 mm     | 27.9           | kV/mm      | ASTM D149      |
| Dielectric Strength, in oil, 3.2 mm     | 19.6           | kV/mm      | ASTM D149      |
| Relative Permittivity, 100 Hz           | 3.15           | -          | ASTM D150      |
| Relative Permittivity, 1 kHz            | 3.15           | -          | ASTM D150      |
| Dissipation Factor, 100 Hz              | 0.0015         | -          | ASTM D150      |
| Dissipation Factor, 1 kHz               | 0.0012         | -          | ASTM D150      |
| Dissipation Factor, 2450 MHz            | 0.0025         | -          | ASTM D150      |
| Volume Resistivity                      | 1.E+15         | Ω.cm       | IEC 60093      |
| Surface Resistivity, ROA                | >1.E+15        | Ω          | 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, 1 MHz            | 2.9            | -          | IEC 60250      |
| Dissipation Factor, 50/60 Hz            | 0.0005         | -          | IEC 60250      |
| Dissipation Factor, 1 MHz               | 0.006          | -          | IEC 60250      |
| Dissipation Factor, 2450 MHz            | 0.0025         | -          | IEC 60250      |
| Comparative Tracking Index              | 150            | V          | IEC 60112      |
| Comparative Tracking Index, M           | 100            | V          | IEC 60112      |
| Relative Permittivity, 50/60 Hz         | 2.9            | -          | IEC 60250      |

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| <b>FLAME CHARACTERISTICS</b>                  |                |       |                |
| Glow Wire Flammability Index 960°C, passes at | 3.2            | mm    | IEC 60695-2-12 |
| Oxygen Index (LOI)                            | 47             | %     | ISO 4589       |
| <b>INJECTION MOLDING</b>                      |                |       |                |
| Drying Temperature                            | 150            | °C    |                |
| Drying Time                                   | 4 – 6          | Hrs   |                |
| Drying Time (Cumulative)                      | 24             | Hrs   |                |
| Maximum Moisture Content                      | 0.02           | %     |                |
| Melt Temperature                              | 350 – 400      | °C    |                |
| Nozzle Temperature                            | 345 – 400      | °C    |                |
| Front - Zone 3 Temperature                    | 345 – 400      | °C    |                |
| Middle - Zone 2 Temperature                   | 340 – 400      | °C    |                |
| Rear - Zone 1 Temperature                     | 330 – 400      | °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    |                |
| <b>EXTRUSION BLOW MOLDING</b>                 |                |       |                |
| Drying Temperature                            | 140 – 150      | °C    |                |
| Drying Time                                   | 4 – 6          | Hrs   |                |
| Drying Time (Cumulative)                      | 24             | Hrs   |                |
| Maximum Moisture Content                      | 0.01 – 0.02    | %     |                |
| Melt Temperature (Parison)                    | 320 – 355      | °C    |                |
| Barrel - Zone 1 Temperature                   | 325 – 350      | °C    |                |
| Barrel - Zone 2 Temperature                   | 330 – 355      | °C    |                |
| Barrel - Zone 3 Temperature                   | 330 – 355      | °C    |                |
| Barrel - Zone 4 Temperature                   | 330 – 355      | °C    |                |
| Adapter - Zone 5 Temperature                  | 330 – 355      | °C    |                |
| Head - Zone 6 - Top Temperature               | 330 – 355      | °C    |                |
| Head - Zone 7 - Bottom Temperature            | 330 – 355      | °C    |                |
| Screw Speed                                   | 10 – 70        | rpm   |                |
| Mold Temperature                              | 65 – 175       | °C    |                |
| Die Temperature                               | 325 – 355      | °C    |                |

## ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

## MORE INFORMATION

For curve data and CAE cards, please visit and register at <https://materialfinder.sabic-specialties.com>



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