# ULTEM™ Resin 2310EPR

## DESCRIPTION

ULTEM 2310EPR resin is a further improved flow 30% glass fiber reinforced polyetherimide resin with an added internal mold release. The material is RoHS compliant and is intrinsically flame retardant without the use of FR modifiers and offers UL94 V0 and 5VA ratings. The material may offer excellent dimension stability, strength, stiffness and creep resistance up to high temperature due to its high glass transition temperature of 217°C. Beside enhanced flow the material offers enhanced metal adhesion in Electroplated applications. The material is opaque.

| GENERAL INFORMATION | |
|---|---|
| **Features** | Flame Retardant, Chemical Resistance, Good Processability, High Flow, Hydrolytic Stability, Low Smoke and Toxicity, Thin Wall, Dielectrics, Amorphous, Low Shrinkage, Non halogenated flame retardant, Electroplatable, Enhanced mold release, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added |
| **Fillers** | Glass Fiber (Total fluorine >50ppm only from inorganic fluorine) |
| **Polymer Types** | Polyetherimide (PEI) |
| **Processing Techniques** | Injection Molding |
| **Regional Availability** | Europe, Asia, Americas |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Automotive | Heavy Truck, Automotive Under the Hood, Aerospace, Motorcycle, Recreational/Specialty Vehicles |
| Building and Construction | Building Component, Water Management |
| Consumer | Consumer Goods, Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance, Furniture |
| Electrical and Electronics | Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Lighting, Printer Copier, Speaker - Earphone, Wireless Communication |
| Hygiene and Healthcare | Personal and Professional Hygiene, Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing |
| Industrial | Electrical, Material Handling, Textile, Eyewear |
| Mass Transportation | Rail |
| Packaging | Industrial Packaging |

## TYPICAL PROPERTY VALUES

Revision 20231109

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| **Tensile Stress, yld, Type I, 5 mm/min** | 158 | MPa | ASTM D638 |
| **Tensile Stress, brk, Type I, 5 mm/min** | 158 | MPa | ASTM D638 |
| **Tensile Strain, yld, Type I, 5 mm/min** | 2.1 | % | ASTM D638 |
| **Tensile Strain, brk, Type I, 5 mm/min** | 2.1 | % | ASTM D638 |
| **Tensile Modulus, 5 mm/min** | 8580 | MPa | ASTM D638 |
| **Flexural Stress, yld, 1.3 mm/min, 50 mm span** | 228 | MPa | ASTM D790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 9140 | MPa | ASTM D790 |
| **Tensile Stress, yield, 5 mm/min** | 160 | MPa | ISO 527 |
| **Tensile Stress, break, 5 mm/min** | 160 | MPa | ISO 527 |
| **Tensile Strain, yield, 5 mm/min** | 2 | % | ISO 527 |
| **Tensile Strain, break, 5 mm/min** | 2 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 8970 | MPa | ISO 527 |

© 2026 Copyright by SABIC. All rights reserved

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Flexural Stress, yield, 2 mm/min | 210 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 9500 | MPa | ISO 178 |
| Ball Indentation Hardness, H358/30 | 160 | MPa | ISO 2039-1 |
| IMPACT [1] | | | |
| Izod Impact, unnotched, 23°C | 450 | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 85 | J/m | ASTM D256 |
| Instrumented Dart Impact Total Energy, 23°C | 9 | J | ASTM D3763 |
| Izod Impact, unnotched 80*10*4 +23°C | 35 | kJ/m² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | 35 | kJ/m² | ISO 180/1U |
| Izod Impact, notched 80*10*4 +23°C | 10 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 10 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 10 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 10 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | 30 | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm | 35 | kJ/m² | ISO 179/1eU |
| THERMAL [1] | | | |
| Vicat Softening Temp, Rate B/50 | 217 | °C | ASTM D1525 |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 205 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 201 | °C | ASTM D648 |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 208 | °C | ASTM D648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 205 | °C | ASTM D648 |
| CTE, -40°C to 150°C, flow | 1.8E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 150°C, xflow | 3.E-05 | 1/°C | ASTM E831 |
| Thermal Conductivity | 0.31 | W/m-°C | ISO 8302 |
| CTE, 23°C to 150°C, flow | 1.8E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 150°C, xflow | 3.E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, 125°C +/- 2°C | PASS | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50 | 212 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 214 | °C | ISO 306 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 207 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 196 | °C | ISO 75/Af |
| Relative Temp Index, Elec [2] | 105 | °C | UL 746B |
| Relative Temp Index, Mech w/impact [2] | 105 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact [2] | 105 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.48 | - | ASTM D792 |
| Mold Shrinkage on Tensile Bar, flow [3] | 0.3 – 0.5 | % | SABIC method |
| Mold Shrinkage, flow, 3.2 mm [3] | 0.4 – 0.6 | % | SABIC method |
| Mold Shrinkage, xflow, 3.2 mm | 0.4 – 0.6 | % | SABIC method |
| Melt Flow Rate, 337°C/6.6 kgf | 11 | g/10 min | ASTM D1238 |
| Density | 1.48 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.9 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.5 | % | ISO 62 |
| Melt Volume Rate, MVR at 360°C/5.0 kg | 12 | cm³/10 min | ISO 1133 |
| ELECTRICAL [1] [2] | | | |

© 2026 Copyright by SABIC. All rights reserved

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Comparative Tracking Index (UL) {PLC} | 4 | PLC Code | UL 746A |
| Hot-Wire Ignition (HWI), PLC 1 | ≥3 | mm | UL 746A |
| Hot-Wire Ignition (HWI), PLC 2 | ≥1.5 | mm | UL 746A |
| Hot-Wire Ignition (HWI), PLC 3 | ≥0.75 | mm | UL 746A |
| Hot-Wire Ignition (HWI), PLC 4 | ≥0.4 | mm | UL 746A |
| High Amp Arc Ignition (HAI), PLC 4 | ≥0.4 | mm | UL 746A |
| High Voltage Arc Track Rate {PLC} | 4 | PLC Code | UL 746A |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D495 |
| FLAME CHARACTERISTICS [2] | | | |
| UL Yellow Card Link | E121562-221095 | - | - |
| UL Recognized, 94V-0 Flame Class Rating | ≥0.4 | mm | UL 94 |
| INJECTION MOLDING [4] | | | |
| 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 | |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

## DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.

© 2026 Copyright by SABIC. All rights reserved