# ULTEM™ Resin DU319

## DESCRIPTION

Transparent Polyetherimide blend with PET resin. Material is RoHS compliant.

This material is food contact compliant in most jurisdictions – exceptions may exist, request a declaration for details.

| GENERAL INFORMATION | |
|---|---|
| **Features** | High Flow, Amorphous, Bio-Renewable, Transparent/Translucent, Food contact, No PFAS intentionally added |
| **Fillers** | Unreinforced |
| **Polymer Types** | Polyetherimide (PEI) |
| **Processing Techniques** | Injection Molding |

| 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 20250319

| 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** | 82 | 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** | 3370 | MPa | ASTM D638 |
| **Flexural Stress, yld, 2.6 mm/min, 100 mm span** | 165 | MPa | ASTM D790 |
| **Tensile Stress, yield, 5 mm/min** | 110 | MPa | ISO 527 |
| **Tensile Stress, break, 5 mm/min** | 75 | MPa | ISO 527 |
| **Tensile Strain, yield, 5 mm/min** | 6 | % | ISO 527 |
| **Tensile Strain, break, 5 mm/min** | 36 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 3300 | MPa | ISO 527 |
| **Flexural Stress, yield, 2 mm/min** | 155 | MPa | ISO 178 |
| **IMPACT** | | | |
| **Izod Impact, notched, 23°C** | 26 | J/m | ASTM D256 |
| **Izod Impact, Reverse Notched, 3.2 mm** | 950 | J/m | ASTM D256 |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Instrumented Dart Impact Total Energy, 23°C | 40 | J | ASTM D3763 |
| Izod Impact, notched 80*10*4 +23°C | 4 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 4 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 3 | kJ/m² | ISO 179/1eA |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 181 | °C | ASTM D1525 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 165 | °C | ASTM D648 |
| CTE, -40°C to 40°C, flow | 4.86E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 4.86E-05 | 1/°C | ASTM E831 |
| Vicat Softening Temp, Rate B/50 | 177 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 180 | °C | ISO 306 |
| PHYSICAL | | | |
| Specific Gravity | 1.29 | - | ASTM D792 |
| Mold Shrinkage, flow, 3.2 mm | 0.6 – 0.7 | % | SABIC method |
| Melt Flow Rate, 295°C/6.6 kgf | 8.1 | g/10 min | ASTM D1238 |
| Density | 1.3 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.5 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.17 | % | ISO 62 |
| INJECTION MOLDING | | | |
| Drying Temperature | 120 – 150 | °C | |
| Drying Time | 4 – 8 | Hrs | |
| Drying Time (Cumulative) | 24 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 300 – 330 | °C | |
| Nozzle Temperature | 300 – 330 | °C | |
| Front - Zone 3 Temperature | 295 – 325 | °C | |
| Middle - Zone 2 Temperature | 290 – 320 | °C | |
| Rear - Zone 1 Temperature | 280 – 315 | °C | |
| Mold Temperature | 95 – 150 | °C | |
| Back Pressure | 0.7 – 1.4 | MPa | |
| Screw Speed | 50 – 100 | rpm | |
| Shot to Cylinder Size | 40 – 60 | % | |
| Vent Depth | 0.025 – 0.076 | mm | |

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