

# ULTEM™ RESIN 3452

REGION ASIA

## DESCRIPTION

45% Glass fiber and mineral filled, enhanced flow Polyetherimide (Tg 217C) with enhanced dimensional stability. ECO Conforming, UL94 V0 and 5VA listing in recognized colors.

ISCC+ certified renewable bio-based solutions are available for this grade via differentiated color nomenclature.

| 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 20230725

| PROPERTIES  | TYPICAL VALUES | UNITS    | TEST METHODS |
|---|----------------|----------|--------------|
| <b>MECHANICAL</b>                                   |                |          |              |
| Tensile Stress, brk, Type I, 5 mm/min               | 131            | MPa      | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min               | 1.4            | %        | ASTM D638    |
| Flexural Stress, brk, 2.6 mm/min, 100 mm span       | 179            | MPa      | ASTM D790    |
| Flexural Modulus, 2.6 mm/min, 100 mm span           | 12410          | MPa      | ASTM D790    |
| <b>IMPACT</b>                                       |                |          |              |
| Izod Impact, notched, 23°C                          | 58             | J/m      | ASTM D256    |
| Izod Impact, Reverse Notched, 3.2 mm                | 218            | J/m      | ASTM D256    |
| <b>THERMAL</b>                                      |                |          |              |
| CTE, -40°C to 150°C, flow                           | 1.9E-05        | 1/°C     | ISO 11359-2  |
| CTE, -40°C to 150°C, xflow                          | 3.6E-05        | 1/°C     | ISO 11359-2  |
| HDT, 1.82 MPa, 6.4 mm, unannealed                   | 212            | °C       | ASTM D648    |
| Relative Temp Index, Elec <sup>(1)</sup>            | 180            | °C       | UL 746B      |
| Relative Temp Index, Mech w/impact <sup>(1)</sup>   | 180            | °C       | UL 746B      |
| Relative Temp Index, Mech w/o impact <sup>(1)</sup> | 180            | °C       | UL 746B      |
| <b>PHYSICAL</b>                                     |                |          |              |
| Specific Gravity                                    | 1.66           | -        | ASTM D792    |
| Mold Shrinkage, flow, 3.2 mm                        | 0.15 – 0.25    | %        | SABIC method |
| Mold Shrinkage, xflow, 3.2 mm                       | 0.3 – 0.5      | %        | SABIC method |
| Melt Flow Rate, 337°C/6.6 kgf                       | 4.6            | g/10 min | ASTM D1238   |
| <b>ELECTRICAL</b>                                   |                |          |              |
| Comparative Tracking Index (UL) {PLC}               | 4              | PLC Code | UL 746A      |

| PROPERTIES                               | TYPICAL VALUES                 | UNITS    | TEST METHODS |
|--|--------------------------------|----------|--------------|
| Hot-Wire Ignition (HWI), PLC 1           | ≥3                             | mm       | UL 746A      |
| Hot-Wire Ignition (HWI), PLC 2           | ≥1.5                           | mm       | UL 746A      |
| High Amp Arc Ignition (HAI), PLC 4       | ≥1.5                           | mm       | UL 746A      |
| High Voltage Arc Track Rate {PLC}        | 4                              | PLC Code | UL 746A      |
| Arc Resistance, Tungsten {PLC}           | 5                              | PLC Code | ASTM D495    |
| FLAME CHARACTERISTICS <sup>(1)</sup>     |                                |          |              |
| UL Yellow Card Link                      | <a href="#">E121562-221107</a> | -        | -            |
| UL Recognized, 94V-0 Flame Class Rating  | ≥0.77                          | mm       | UL 94        |
| UL Recognized, 94-5VA Flame Class Rating | ≥3                             | mm       | UL 94        |
| INJECTION MOLDING                        |                                |          |              |
| 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) 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.

## MORE INFORMATION

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

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