

## Ultem\* Resin 2210R

Americas: COMMERCIAL

20% Glass fiber filled, enhanced flow Polyetherimide (Tg 217C) with internal mold release. ECO Conforming, UL94 V0 and 5VA listing.

### Property

| TYPICAL PROPERTIES <sup>(1)</sup>             |       |          |             |
|-----------------------------------------------|-------|----------|-------------|
|                                               | Value | Unit     | Standard    |
| <b>MECHANICAL</b>                             |       |          |             |
| Tensile Stress, brk, Type I, 5 mm/min         | 139   | MPa      | ASTM D 638  |
| Tensile Strain, brk, Type I, 5 mm/min         | 4     | %        | ASTM D 638  |
| Tensile Modulus, 5 mm/min                     | 6890  | MPa      | ASTM D 638  |
| Flexural Stress, brk, 2.6 mm/min, 100 mm span | 227   | MPa      | ASTM D 790  |
| Flexural Modulus, 2.6 mm/min, 100 mm span     | 6890  | MPa      | ASTM D 790  |
| Hardness, Rockwell M                          | 114   | -        | ASTM D 785  |
| <b>IMPACT</b>                                 |       |          |             |
| Izod Impact, unnotched, 23°C                  | 475   | J/m      | ASTM D 4812 |
| Izod Impact, notched, 23°C                    | 74    | J/m      | ASTM D 256  |
| Izod Impact, Reverse Notched, 3.2 mm          | 475   | J/m      | ASTM D 256  |
| <b>THERMAL</b>                                |       |          |             |
| Vicat Softening Temp, Rate B/50               | 225   | °C       | ASTM D 1525 |
| HDT, 0.45 MPa, 6.4 mm, unannealed             | 210   | °C       | ASTM D 648  |
| HDT, 1.82 MPa, 6.4 mm, unannealed             | 211   | °C       | ASTM D 648  |
| Relative Temp Index, Elec                     | 170   | °C       | UL 746B     |
| Relative Temp Index, Mech w/impact            | 170   | °C       | UL 746B     |
| Relative Temp Index, Mech w/o impact          | 170   | °C       | UL 746B     |
| <b>PHYSICAL</b>                               |       |          |             |
| Specific Gravity                              | 1.42  | -        | ASTM D 792  |
| Melt Flow Rate, 337°C/6.6 kgf                 | 9     | g/10 min | ASTM D 1238 |
| <b>ELECTRICAL</b>                             |       |          |             |
| Arc Resistance, Tungsten {PLC}                | 6     | PLC Code | ASTM D 495  |
| Hot Wire Ignition {PLC}                       | 1     | PLC Code | UL 746A     |
| High Voltage Arc Track Rate {PLC}             | 2     | PLC Code | UL 746A     |
| High Ampere Arc Ign, surface {PLC}            | 4     | PLC Code | UL 746A     |
| Comparative Tracking Index (UL) {PLC}         | 4     | PLC Code | UL 746A     |
| <b>FLAME CHARACTERISTICS</b>                  |       |          |             |
| UL Recognized, 94V-0 Flame Class Rating (3)   | 0.4   | mm       | UL 94       |
| UL Recognized, 94-5VA Rating (3)              | 1.9   | mm       | UL 94       |
| Oxygen Index (LOI)                            | 50    | %        | ASTM D 2863 |

Source GMD, last updated:12/29/1999

### Processing

| Parameter                | Value | Unit |
|--------------------------|-------|------|
| 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  |

Source GMD, last updated:12/29/1999

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR [\(LOCAL SALES OFFICE\)](#) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

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