Celanese
The chemistry inside innovation™

# CELANEX® 3309HRHF

30% glass-fiber reinforced; hydrolysis resistant high flow PBT grade; not lubricated for improved adhesion to LSR
Celanex 3309HRHF is a 30% fiberglass reinforced Polybutylene Terephthalate which has excellent hydrolysis resistance, mechanical properties and improved flow.

## Product information

| | | | |
|---|---|---|---|
| Part Marking Code | PBT-GF30 | | ISO 11469 |

## Rheological properties

| | | | |
|---|---|---|---|
| Melt mass-flow rate | 30 | g/10min | ISO 1133 |
| Melt mass-flow rate, Temperature | 250 | °C | |
| Melt mass-flow rate, Load | 2.16 | kg | |
| Moulding shrinkage range, parallel | 0.1 - 0.3 | % | ISO 294-4, 2577 |
| Moulding shrinkage range, normal | 0.7 - 1.2 | % | ISO 294-4, 2577 |

## Typical mechanical properties

| | | | |
|---|---|---|---|
| Tensile Modulus | 10400 | MPa | ISO 527-1/-2 |
| Stress at break, 5mm/min | 150 | MPa | ISO 527-1/-2 |
| Strain at break, 5mm/min | 2.6 | % | ISO 527-1/-2 |
| Flexural Modulus | 9700 | MPa | ISO 178 |
| Flexural Strength | 220 | MPa | ISO 178 |
| Charpy impact strength, 23°C | 44 | kJ/m² | ISO 179/1eU |
| Charpy impact strength, -30°C | 39 | kJ/m² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 8 | kJ/m² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 9.1 | kJ/m² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 9 | kJ/m² | ISO 180/1A |
| Izod impact strength, 23°C | 45 | kJ/m² | ISO 180/1U |

## Thermal properties

| | | | |
|---|---|---|---|
| Melting temperature, 10°C/min | 225 | °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa | 210 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 222 | °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion, parallel | 20 | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 100 | E-6/K | ISO 11359-1/-2 |

## Electrical properties

| | | | |
|---|---|---|---|
| Relative permittivity, 100Hz | 2.8 | | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 3.2 | | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 140 | E-4 | IEC 62631-2-1 |
| Volume resistivity | 2E15 | Ohm.m | IEC 62631-3-1 |
| Surface resistivity | 2E15 | Ohm | IEC 62631-3-2 |
| Electric strength | 22 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 250 | | IEC 60112 |

# CELANEX® 3309HRHF

## Other properties

| | | | |
|---|---|---|---|
| Humidity absorption, 2mm | 0.16 | % | Sim. to ISO 62 |
| Density | 1530 | kg/m³ | ISO 1183 |

## Injection

| | | | |
|---|---|---|---|
| Melt Temperature Optimum | 250 | °C | Internal |
| Max. mould temperature | 65 - 93 | °C | |

## Additional information

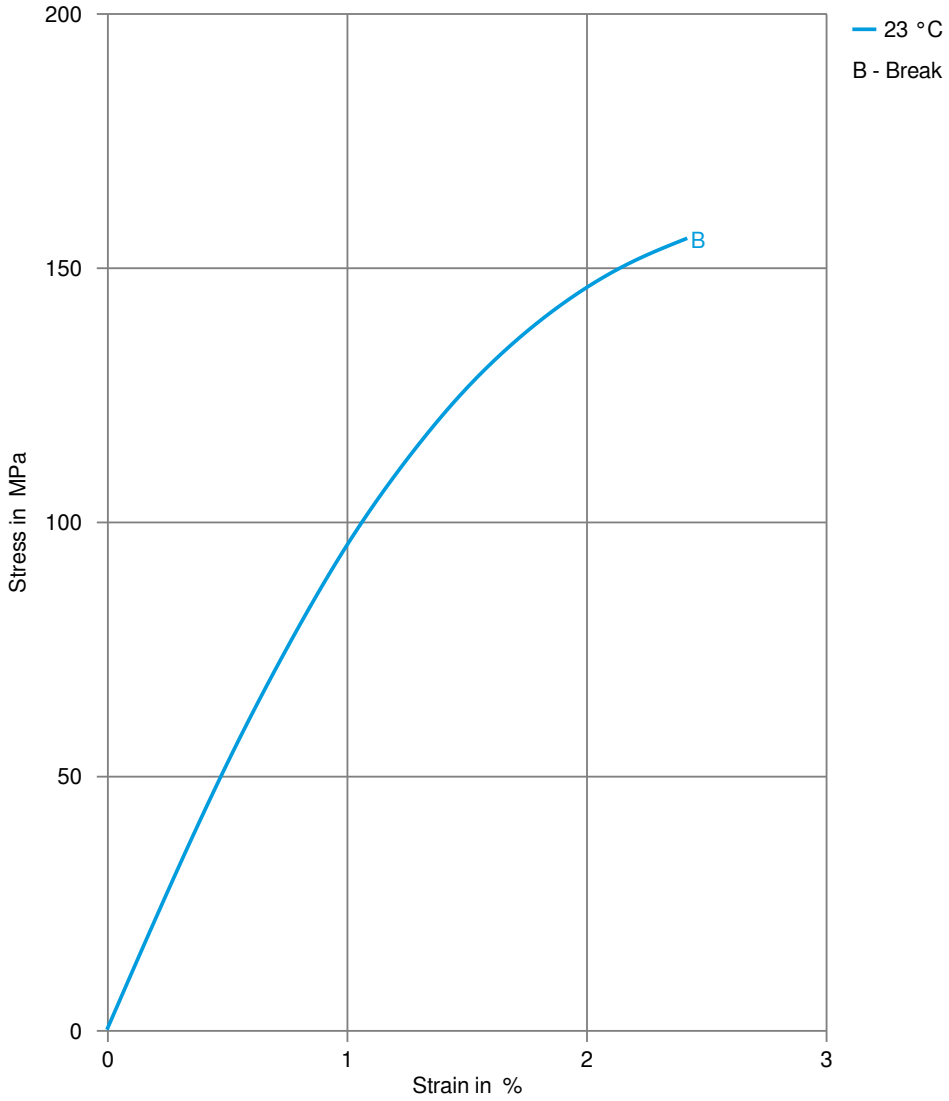
Injection molding

Rear Temperature 450-470(230-240) deg F (deg C)
Center Temperature 460-480(235-250) deg F (deg C)
Front Temperature 470-500(240-260) deg F (deg C)
Nozzle Temperature 480-500(250-260) deg F (deg C)
Melt Temperature 460-500(235-260) deg F (deg C)
Mold Temperature 150-200(65-93) deg F (deg C)
Back Pressure 0-50 psi
Screw Speed Medium
Injection Speed Fast

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

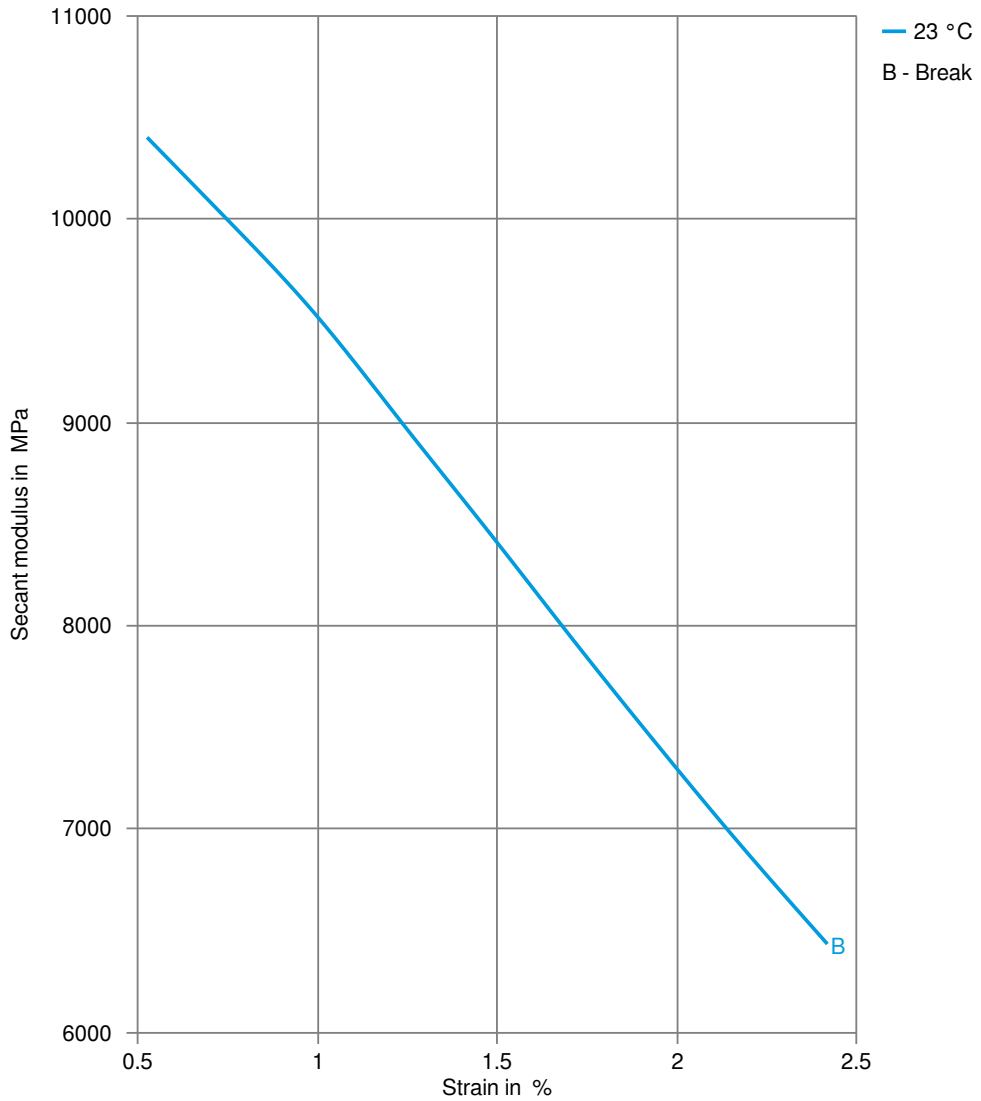
# CELANEX® 3309HRHF

## Stress-strain



# CELANEX® 3309HRHF

## Secant modulus-strain



# CELANEX® 3309HRHF

## Processing Texts

| | |
|---|---|
| Injection molding | Rear Temperature 450-470(230-240) deg F (deg C)<br>Center Temperature 460-480(235-250) deg F (deg C)<br>Front Temperature 470-500(240-260) deg F (deg C)<br>Nozzle Temperature 480-500(250-260) deg F (deg C)<br>Melt Temperature 460-500(235-260) deg F (deg C)<br>Mold Temperature 150-200(65-93) deg F (deg C)<br>Back Pressure 0-50 psi<br>Screw Speed Medium<br>Injection Speed Fast<br><br>Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used. |
| Injection molding Preprocessing | To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-30°F (-34°C) at 250°F (121°C) for 4 hours. |

## Other Approvals

Other Approvals

| OEM | Specification | Additional Information |
|---|---|---|
| Ford | WSS-M4D1017-A1 | |
| GM | GMW16459P-PBT-GF30W | |
| Li Auto | Q/LiA5310038 | 2021 (V2) |