

CELANEX® 3309HR

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

Product information

Part Marking Code	> PBT-GF30 <	ISO 11469
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Rheological properties

Melt mass-flow rate	17 g/10min	ISO 1133
Melt mass-flow rate, Temperature	250 °C	
Melt mass-flow rate, Load	2.16 kg	
Moulding shrinkage range, parallel	0.3 - 0.7 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1.1 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	9200 MPa	ISO 527-1/-2
Stress at break, 5mm/min	139 MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.7 %	ISO 527-1/-2
Flexural Modulus	8700 MPa	ISO 178
Flexural Strength	210 MPa	ISO 178
Charpy impact strength, 23°C	46 kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	45 kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	8.5 kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	8.5 kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	12 kJ/m²	ISO 180/1A
Izod impact strength, 23°C	35 kJ/m²	ISO 180/1U
Poisson's ratio	0.389	
Shore D hardness, 15s	85	ISO 48-4 / ISO 868

Thermal properties

Melting temperature, 10°C/min	225 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	205 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	225 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	220 °C	ISO 306
Coeff. of linear therm. expansion, parallel	25 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100 E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB class	UL 94
Thickness tested	0.71 mm	UL 94



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Electrical properties

Relative permittivity, 100Hz	4.5	IEC 62631-2-1
Relative permittivity, 1MHz	4.1	IEC 62631-2-1
Dissipation factor, 100Hz	22 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	160 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	31 kV/mm	IEC 60243-1

Other properties

Humidity absorption, 2mm	0.16 %	Sim. to ISO 62
Density	1540 kg/m³	ISO 1183

Injection

Drying Temperature	120 - 130 °C	
Drying Time, Dehumidified Dryer	4 h	
Processing Moisture Content	0.02 %	
Melt Temperature Optimum	265 °C	Internal
Max. mould temperature	65 - 93 °C	
Injection speed	medium-fast	

Additional information

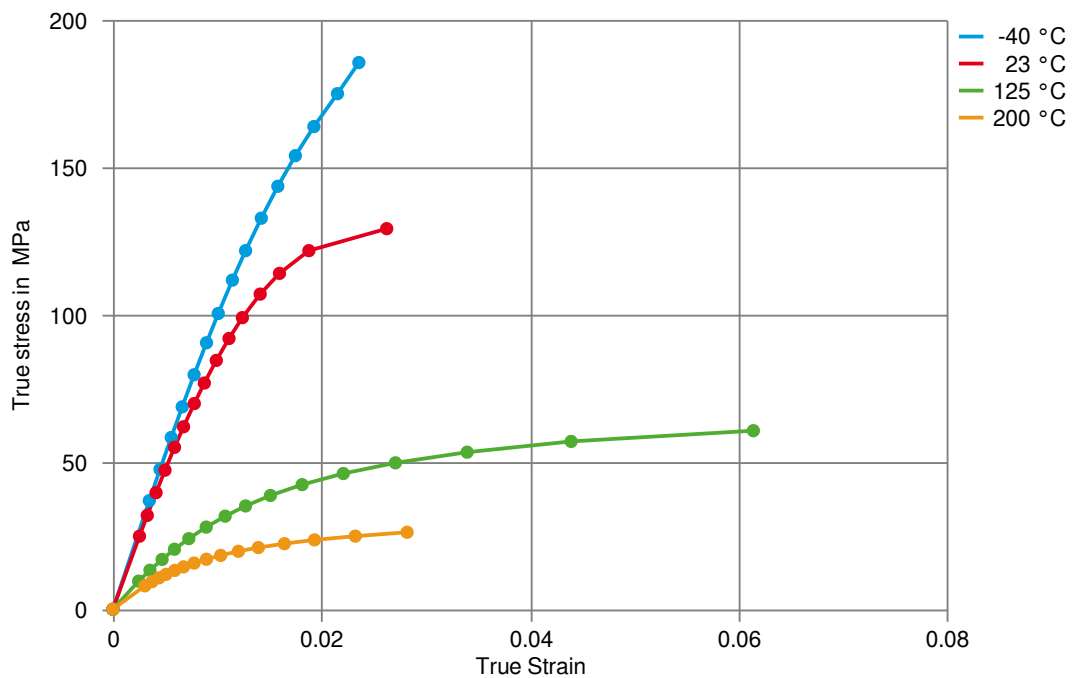
Injection molding	Rear Temperature 450-470(230-240) deg F (deg C)
	Center Temperature 460-480(235-250) deg F (deg C)
	Front Temperature 470-500(240-260) deg F (deg C)
	Nozzle Temperature 480-500(250-260) deg F (deg C)
	Melt Temperature 460-500(235-260) deg F (deg C)
	Mold Temperature 150-200(65-93) deg 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.



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True stress-strain



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Processing Texts

Pre-drying

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 <-40°F (-40°C) at 250°F (121°C) for 4 hours.

Longer pre-drying times/storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

Injection molding

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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
Continental	TST N 055 47.27	(TST N 055 47.27-000)
Ford	WSS-M4D929-A3	Natural & Black
Hyundai	MS941-03, Type F-5	
Li Auto	Q/LiA5310038	2021 (V2)
Nissan	PBTP(G30)-1NX-1	
Renault		No spec listed
VW Group	VW50136	

