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CELANEX® 3309HRHF

CELANEX® PBT

Celanex 3309HRHF is a 30% fiberglass reinforced Polybutylene Terephthalate which has excellent hydrolysis resistance, mechanical properties and improved flow.

Product information

Resin Identification	PBT-GF30	ISO 1043
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 - 0.5	%	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
Tensile stress at break, 5mm/min	150	MPa	ISO 527-1/-2
Tensile 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
Poisson's ratio	0.34[C]		

[C]: Calculated

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
Temperature of deflection under load, 1.8 MPa	210	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	222	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	20	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), 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, 100 drops	250[OT]		IEC 60112

[OT]: One time tested

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Physical/Other properties

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

Injection

Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Screw tangential speed	0.1 - 0.3	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	60	°C
Max. mould temperature	130	°C
Ejection temperature	168	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Special characteristics	Hydrolysis resistant, High Flow

Additional information

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.

Processing

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

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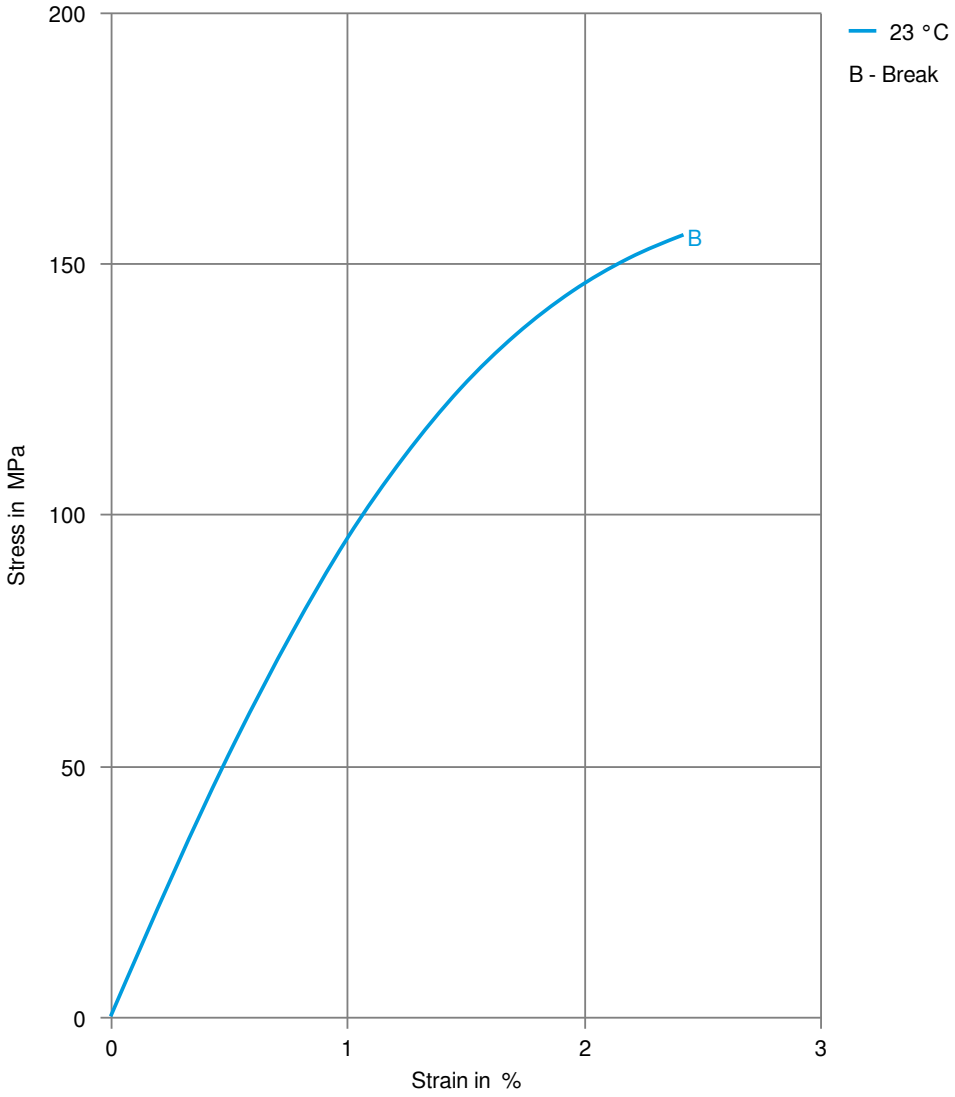
low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSS-M4D1017-A1	
General Motors	GMW16459P-PBT-GF30W	N/A
Li Auto	Q/LiA5310038	2021 (V2)

Stress-strain



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Secant modulus-strain