Celanese
The chemistry inside innovation™

CELANEX® 3309HRT

30% glass-fiber reinforced; hydrolysis resistant; toughened PBT grade; not lubricated
Celanex 3309HRT is a non-lubricated, 30% fiberglass reinforced Polybutylene Terephthalate that has excellent hydrolysis resistance, toughness and improved flow.

Product information

Part Marking Code	PBT-I-GF30		ISO 11469

Rheological properties

Melt mass-flow rate	22	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	0.5 - 0.9	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	8700	MPa	ISO 527-1/-2
Stress at break, 5mm/min	115	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.8	%	ISO 527-1/-2
Flexural Modulus	8700	MPa	ISO 178
Flexural Strength	190	MPa	ISO 178
Charpy impact strength, 23°C	53	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	38	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	10	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	10	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	10	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	49	kJ/m²	ISO 180/1U
Izod impact strength, -30°C	32	kJ/m²	ISO 180/1U
Shore D hardness, 15s	82		ISO 48-4 / ISO 868

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	208	°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	90	E-6/K	ISO 11359-1/-2

Electrical properties

Relative permittivity, 100Hz	2.8		IEC 62631-2-1
Relative permittivity, 1MHz	2.8		IEC 62631-2-1
Dissipation factor, 1MHz	110	E-4	IEC 62631-2-1
Volume resistivity	1E15	Ohm.m	IEC 62631-3-1
Surface resistivity	2E17	Ohm	IEC 62631-3-2
Electric strength	38	kV/mm	IEC 60243-1

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Comparative tracking index	PLC 1	PLC	UL 746A

Other properties

Humidity absorption, 2mm	0.15	%	Sim. to ISO 62
Density	1500	kg/m³	ISO 1183

Injection

Drying Temperature	120 - 130	°C
Drying Time, Dehumidified Dryer	4	h
Processing Moisture Content	0.02	%
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.

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
Stellantis - Chrysler	CPN 4615	CANOD