

CELANEX® 3209HR

15% glass-fiber reinforced grade, improved hydrolysis resistance

Celanex 3209HR is a 15% glass filled PBT that has an excellent hydrolysis resistance, mechanical properties and processability. Celanex 3209HR is non-lubricated.

Product information

Part Marking Code

> PBT-GF15 <

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 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.9 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	5800 MPa	ISO 527-1/-2
Stress at break, 5mm/min	100 MPa	ISO 527-1/-2
Strain at break, 5mm/min	3.5 %	ISO 527-1/-2
Flexural Modulus	5300 MPa	ISO 178
Flexural Strength	150 MPa	ISO 178
Charpy impact strength, 23°C	22 kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	22 kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.5 kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	4 kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	5.3 kJ/m²	ISO 180/1A
Izod impact strength, 23°C	17 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
Glass transition temperature, 10°C/min	60 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	180 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	220 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 10N	220 °C	ISO 306
Coeff. of linear therm. expansion, parallel	38 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	3.7	IEC 62631-2-1
Relative permittivity, 1MHz	2.9	IEC 62631-2-1
Dissipation factor, 1MHz	240 E-4	IEC 62631-2-1
Volume resistivity	4E14 Ohm.m	IEC 62631-3-1
Surface resistivity	2E16 Ohm	IEC 62631-3-2



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Electric strength
Comparative tracking index

17 kV/mm
PLC 2 PLC

IEC 60243-1
UL 746A

Other properties

Humidity absorption, 2mm
Density

0.17 %
1410 kg/m³

Sim. to ISO 62
ISO 1183

Injection

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.

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.

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Printed: 2023-09-14



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Injection molding Preprocessing

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Other Approvals

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OEM	Specification	Additional Information
Li Auto	Q/LiA5310038	2021 (V2)

