Celanese
The chemistry inside innovation™

CELANEX® DEV 3309HRLT - PBT

Description

Celanex® DEV 3309 HRLT is a 30% glass reinforced grade. It offers excellent physical properties, good laser transparency and hydrolysis resistance for laser welding applications.

Physical properties	Value	Unit	Test Standard
Density	**96.1**	lb/ft³	ISO 1183
Melt volume rate, MVR	**7**	cm³/10min	ISO 1133
MVR temperature	**500**	°F	ISO 1133
MVR load	**11**	lb	ISO 1133
Molding shrinkage, parallel (flow)	**0.3 - 0.7**	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	**0.7 - 1.1**	%	ISO 294-4, 2577
Humidity absorption, 23°C/50%RH	**0.16**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**1.52E6**	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	**21000**	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	**2.3**	%	ISO 527-1, -2
Flexural modulus, 23°C	**1.46E6**	psi	ISO 178
Flexural strength, 23°C	**33400**	psi	ISO 178
Charpy notched impact strength, 23°C	**4.76**	ft-lb/in²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**437**	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**140**	°F	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	**401**	°F	ISO 75-1, -2
DTUL at 0.45 MPa	**437**	°F	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	**428**	°F	ISO 306

Typical injection moulding processing conditions

Pre Drying	Value	Unit
Necessary low maximum residual moisture content	**0.02**	%
Drying time	**4**	h
Drying temperature	**176 - 248**	°F

Temperature	Value	Unit
Hopper temperature	**68 - 122**	°F
Feeding zone temperature	**446 - 464**	°F
Zone1 temperature	**446 - 464**	°F
Zone2 temperature	**455 - 482**	°F
Zone3 temperature	**455 - 482**	°F
Zone4 temperature	**464 - 500**	°F
Nozzle temperature	**482 - 500**	°F
Melt temperature	**455 - 500**	°F
Mold temperature	**149 - 248**	°F
Hot runner temperature	**482 - 500**	°F

Speed	Value
Injection speed	**medium-fast**

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Other text information

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

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.

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.

Characteristics

Special Characteristics	Auto spec approved, Hydrolysis resistant, Laser transparent
Product Categories	Glass reinforced
Processing	Injection molding
Delivery Form	Pellets

Other Approvals

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