Celanese
The chemistry inside innovation™

CELANEX® 4300LM - PBT

Description

Celanex 4300LM is a toughened 30% glass reinforced PBT that is enhanced for improved laser marking graphics. It is a lasermarkable grade available in a black color to mark white, The grade is specially formulated to yield crisp marks when subjected to a Nd:YAG laser or equivalent operated at 1064nm or 532nm. Lasers operating in the UV region (355nm) may yield different results

Physical properties	Value	Unit	Test Standard
Density	**1530**	kg/m³	ISO 1183
Molding shrinkage, parallel	**0.3 - 0.5**	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**9300**	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	**130**	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	**3.1**	%	ISO 527-2/1A
Flexural modulus, 23°C	**9000**	MPa	ISO 178
Flexural strength, 23°C	**205**	MPa	ISO 178
Charpy impact strength, 23°C	**40**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**10**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**8.5**	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	**12**	kJ/m²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
DTUL at 1.8 MPa	**200**	°C	ISO 75-1, -2

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	**0.02**	%	-
Drying time	**4**	h	-
Drying temperature	**120 - 130**	°C	-
Temperature	**Value**	**Unit**	**Test Standard**
Hopper temperature	**20 - 50**	°C	-
Feeding zone temperature	**230 - 240**	°C	-
Zone1 temperature	**230 - 240**	°C	-
Zone2 temperature	**235 - 250**	°C	-
Zone3 temperature	**235 - 250**	°C	-
Zone4 temperature	**240 - 260**	°C	-
Nozzle temperature	**240 - 260**	°C	-
Melt temperature	**235 - 260**	°C	-
Mold temperature	**65 - 96**	°C	-
Hot runner temperature	**250 - 260**	°C	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**medium-fast**	-	-

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)

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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.

Characteristics

Special Characteristics	Processing
Laser markable	Injection molding
Product Categories	**Delivery Form**
Glass reinforced	Pellets