

CELANEX® 3300-2LM

CELANEX® PBT

Celanex 3300-2LM is a 30% glass-filled PBT that is enhanced for improved laser marking graphics. It contains an internal lubricant for enhanced mold release. 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

Product information

Resin Identification	PBT-GF30	ISO 1043
Part Marking Code	>PBT-GF30<	ISO 11469

Rheological properties

Melt mass-flow rate	17 g/10min	ISO 1133
Melt mass-flow rate, Temperature	250 °C	
Melt mass-flow rate, Load	2.16 kg	
Moulding shrinkage range, parallel	0.3 - 0.5 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1.1 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	9200 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	135 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 %	ISO 527-1/-2
Flexural modulus	9700 MPa	ISO 178
Flexural strength	220 MPa	ISO 178
Charpy impact strength, 23°C	45 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	40 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	8.5 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	8.5 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	7.5 kJ/m ²	ISO 180/1A
Hardness, Rockwell, M-scale	90	ISO 2039-2
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	209 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	25 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100 E-6/K	ISO 11359-1/-2

Flammability

FMVSS Class	B	ISO 3795 (FMVSS 302)
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Physical/Other properties

Humidity absorption, 2mm	0.2 %	Sim. to ISO 62
Water absorption, 2mm	0.4 %	Sim. to ISO 62
Density	1530 kg/m ³	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

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Laser Markable

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

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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.

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