Celanese
The chemistry inside innovation™

CELANEX® 7040 GM30

CELANEX® PBT

Celanex 7040 GM30 is a 30% glass/mineral polyester with a good balance of mechanical properties and processability and high rigidity

Product information

Resin Identification	PBT-(GF+MD)30	ISO 1043
Part Marking Code	>PBT-(GF+MD)30<	ISO 11469

Rheological properties

Melt volume-flow rate	16	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Moulding shrinkage range, parallel	0.3 - 0.4	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	10000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	120	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5	%	ISO 527-1/-2
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	6.5	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.34[C]		

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	200	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	220	°C	ISO 75-1/-2

Physical/Other properties

Humidity absorption, 2mm	0.15	%	Sim. to ISO 62
Density	1550	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

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Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Special characteristics	Low Warpage

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 minimum 4 hours.

Processing

Rear Temperature 450-480 (230-250) deg F (deg C)
Center Temperature 460-490(235-255) deg F (deg C)
Front Temperature 470-500 (240-260) deg F (deg C)
Nozzle Temperature 480-510 (250-265) deg F (deg C)
Melt Temperature 460-510 (235-265) 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 Notes

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.

Storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

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Stress-strain