

CELANEX® 3400

CELANEX® PBT

Celanex 3400 is a general purpose, 40% glass reinforced polybutylene terephthalate that offers a good combination of mechanical, electrical, and thermal properties. This grade provides outstanding processability and good chemical resistance. Celanex 3400 is a high flow material.

Product information

Resin Identification	PBT-GF40	ISO 1043
Part Marking Code	>PBT-GF40<	ISO 11469

Rheological properties

Melt mass-flow rate	8 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 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	12100 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	140 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.4 %	ISO 527-1/-2
Flexural modulus	11000 MPa	ISO 178
Flexural strength	220 MPa	ISO 178
Charpy impact strength, 23°C	47 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	45 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	9.5 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	10 kJ/m ²	ISO 180/1A
Hardness, Rockwell, M-scale	93	ISO 2039-2
Poisson's ratio	0.33 ^[C]	
Shore D hardness, 15s	85	ISO 48-4 / ISO 868

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	225 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	45 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	212 °C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	225 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	15 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	101 E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB class	IEC 60695-11-10
Thickness tested	0.71 mm	IEC 60695-11-10

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Electrical properties

Relative permittivity, 100Hz	3.5	IEC 62631-2-1
Relative permittivity, 1MHz	3.4	IEC 62631-2-1
Dissipation factor, 1MHz	130 E-4	IEC 62631-2-1
Volume resistivity	1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	1E15 Ohm	IEC 62631-3-2
Electric strength	19 kV/mm	IEC 60243-1
Comparative tracking index	350	IEC 60112
Arc Resistance	127 s	UL 746B

Physical/Other properties

Humidity absorption, 2mm	0.15 %	Sim. to ISO 62
Water absorption, 2mm	0.05 %	Sim. to ISO 62
Water absorption, Immersion 24h	0.07 %	Sim. to ISO 62
Density	1610 kg/m³	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

Additional information

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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