

CELANEX® 4306

CELANEX® PBT

Celanex 4306 is a 30% glass reinforced, toughened, low warpage thermoplastic polyester.

Product information

| | | |
|----------------------|---------------------|-----------|
| Resin Identification | (PBT- I+PC)-GF30 | ISO 1043 |
| Part Marking Code | >(PBT-I+PC)-GF30< | ISO 11469 |

Rheological properties

| | | |
|------------------------------------|-------------|-----------------|
| Moulding shrinkage range, parallel | 0.4 - 0.6 % | ISO 294-4, 2577 |
|------------------------------------|-------------|-----------------|

Typical mechanical properties

| | | |
|---------------------------------------|----------------------|--------------|
| Tensile modulus | 9200 MPa | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 120 MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 3 % | ISO 527-1/-2 |
| Flexural modulus | 8500 MPa | ISO 178 |
| Flexural strength | 180 MPa | ISO 178 |
| Charpy impact strength, 23°C | 60 kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 45 kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 12 kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 11 kJ/m ² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 12 kJ/m ² | ISO 180/1A |
| Hardness, Rockwell, M-scale | 73 | ISO 2039-2 |
| 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 | 164 °C | ISO 75-1/-2 |
| Temperature of deflection under load, 0.45 MPa | 210 °C | ISO 75-1/-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 20 E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal | 87 E-6/K | ISO 11359-1/-2 |

Physical/Other properties

| | | |
|---------------------------------|------------------------|----------------|
| Water absorption, Immersion 24h | 0.1 % | Sim. to ISO 62 |
| Density | 1500 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 | 260 °C |
| Min. melt temperature | 240 °C |
| Max. melt temperature | 275 °C |
| Screw tangential speed | 0.1 - 0.3 m/s |
| Mold Temperature Optimum | 80 °C |

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|------------------------|--------|
| Min. mould temperature | 60 °C |
| Max. mould temperature | 130 °C |

Characteristics

| | |
|-------------------------|--------------------------------|
| Processing | Injection Moulding |
| Delivery form | Pellets |
| Special characteristics | High impact or impact modified |

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 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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Automotive

OEM

General Motors

General Motors

STANDARD

GMW17249

GMW17249

ADDITIONAL INFORMATION

Black

Natural