

CELANEX® 2302 GV1/30 ECO-R

CELANEX® PBT

Chemical abbreviation according ISO 1043-1: PBT+PET Moulding compound ISO 7792- PBT/PET, MGHR, 08-110N, GF30. Polybutylene terephthalate (PBT) / recycled Polyethylene terephthalate (R-PET) polymer blend, 30% glass fiber reinforced, for injection molded parts with superior gloss.

Celanex® 2302 GV1/30 ECO-R incorporates 25% of post-consumer recycled Polyethylene terephthalate (PCR-PET) by weight in the finished product.

Product information

Resin Identification	(PBT+PET)-GF3 0	ISO 1043
Part Marking Code	>(PBT+PET)-GF30<	ISO 11469

Rheological properties

Melt volume-flow rate	14 cm ³ /10min	ISO 1133
Temperature	265 °C	
Load	2.16 kg	

Typical mechanical properties

Tensile modulus	10000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	145 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.2 %	ISO 527-1/-2
Flexural modulus	8600 MPa	ISO 178
Flexural strength	220 MPa	ISO 178
Flexural strain at failure	2.9 %	ISO 178
Charpy notched impact strength, 23 °C	8.5 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34 ^[C]	

[C]: Calculated

Thermal properties

Melting temperature, 10 °C/min	250 °C	ISO 11357-1/-3
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Flammability

Oxygen index	20 %	ISO 4589-1/-2
Glow Wire Flammability Index, 1.0mm	675 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.0mm	700 °C	IEC 60695-2-13
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	69 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Comparative tracking index	250	IEC 60112
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Physical/Other properties

Density	1550 kg/m ³	ISO 1183
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Injection

Drying Recommended	yes
Drying Temperature	120 °C
Drying Time, Dehumidified Dryer	4 - 6 h
Processing Moisture Content	≤0.02 %
Melt Temperature Optimum	265 °C
Min. melt temperature	255 °C
Max. melt temperature	275 °C
Screw tangential speed	0.1 - 0.3 m/s
Mold Temperature Optimum	100 °C
Min. mould temperature	90 °C
Max. mould temperature	130 °C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Heat stabilised or stable to heat, High Gloss
Sustainability	Recycled Content

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%. The drying should be done in a dry-air dryer (dew point < -30 °C) with a temperature of 120 to 140 °C and a drying time of 2 to 4 hours. In case of longer residence times in the dry-air dryer, the temperature should be reduced to 100 °C.

The time between drying and processing should be kept as short as possible. The processing machine feed hopper should be closed during the processing operation.

Processing

Melt Temperature 265-275 °C
Mold Temperature *) 90-100 °C
Maximum Barrel Residence Time **) 5-10 min
Injection Speed fast
Peripheral screw speed max.0,3 m/sec
Back Pressure 10-30 bar
Injection Pressure 600-1000 bar
Holding Pressure 400-800 bar
Nozzle Design open design preferred

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing

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low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided.

Celanese recommends only externally heated hot runner systems.

*) For moulded parts with especially high requirements to the surface quality or dimensional stability, a mold temperature of up to 110 °C can be advantageous.

**) If the cylinder temperatures are higher than the recommended maximum temperatures, the max. residence time in the barrel has to be reduced.

Processing Notes

Pre-Drying

CELANEX should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be $\leq -30^{\circ}\text{C}$. The time between drying and processing should be as short as possible.

Storage

For subsequent storage of the material in the dryer until processed ($\leq 60\text{ h}$) it is necessary to lower the temperature to 100°C .