

Product Texts

Chemical abbreviation according to ISO 1043: PBT GF50. Moulding compound ISO 7792-1 PBT, MGAR, 08-160, GF50. Polybutylene terephthalate, 50 % glass fiber reinforced. Flammability UL 94 HB minimum thickness 0.82 mm. Recognition by Underwriters Laboratories, USA (UL)

Flammability @1.6mm nom. HB
thickn. -
Flammability at thickness h (0.82 HB
mm) UL recognition (h)

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	5	cm ³ /10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
^[C] Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	0.8	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	17000	MPa	ISO 527
^[C] Stress at break	165	MPa	ISO 527
^[C] Strain at break	1.6	%	ISO 527
^[C] Charpy impact strength, +23°C	70	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	65	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	11.5	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	11.5	kJ/m ²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
^[C] Temp. of deflection under load, 1.80 MPa	215	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	228	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	225	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	15	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.6	mm	-
^[C] Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	-
Yellow Card available	yes	-	-
^[C] Oxygen index	20	%	ISO 4589-1/-2

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	4.4	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	4.1	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	16	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	190	E-4	IEC 62631-2-1
^[C] Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	>1E15	Ohm	IEC 62631-3-2
^[C] Electric strength	35	kV/mm	IEC 60243-1

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
^[C] Water absorption	0.35	%	Sim. to ISO 62
^[C] Humidity absorption	0.15	%	Sim. to ISO 62
^[C] Density	1710	kg/m ³	ISO 1183

[C]: CAMPUS

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120 - 140	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	260 - 270	°C	-
Mold temperature	75 - 85	°C	-

Characteristics

Processing

Injection Molding

Special Characteristics

Heat stabilized or stable to heat

Delivery form

Pellets

Regional Availability

Europe

Additives

Release agent

Other text information

Injection molding

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 4 to 6 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.

Melt Temperature 260-270 °C

Mold Temperature *) 75-85 °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 low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided. For grades containing flame retardants, a maximum temperature of 265 °C should not be exceeded.

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.