

Product Texts

Chemical abbreviation according to ISO 1043-1: PBT Moulding compound ISO 7792- PBT, MGHR, 08-070N, GF20 Polybutylene terephthalate, 20 % glass fibre reinforced. Flammability UL 94 HB minimum thickness 1.2 mm. Recognition by Underwriters Laboratories, USA (UL)

Flammability @1.6mm nom. HB -
 thickn.
 Flammability at thickness h (1 HB UL recognition (h)
 mm)

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	14	cm ³ /10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
^[C] Molding shrinkage, parallel	0.5	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.1	%	ISO 294-4, 2577
^[C] Density of melt	1230	kg/m ³	-
^[C] Thermal conductivity of melt	0.156	W/(m K)	-
^[C] Spec. heat capacity of melt	1840	J/(kg K)	-
^[C] Ejection temperature	220	°C	-

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	7400	MPa	ISO 527
^[C] Stress at break	125	MPa	ISO 527
^[C] Strain at break	3	%	ISO 527
^[C] Charpy impact strength, +23°C	46	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	43	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	7.5	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	7	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	195	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	220	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	215	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	35	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	-
^[C] Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	1.0	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	4.2	-	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	31	kV/mm	IEC 60243-1
[C]: CAMPUS			

Other properties	Value	Unit	Test Standard
[C] Water absorption	0.4	%	Sim. to ISO 62
[C] Humidity absorption	0.15	%	Sim. to ISO 62
[C] Density	1450	kg/m ³	ISO 1183
[C]: CAMPUS			

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120 - 140	°C	-
Pre-drying - Time	2 - 4	h	-
Processing humidity	≤0.02	%	-
Melt temperature	260 - 270	°C	-
Mold temperature	75 - 85	°C	-

Characteristics

Processing Injection Molding
Delivery form Pellets
Additives Release agent

Special Characteristics Heat stabilized or stable to heat
Regional Availability North America, Europe, Asia Pacific

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 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.

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.