

## PIBIFOR® K2 GF/30 - PBT

### Description

PBT, 30% Glass Fiber reinforced

Physical properties	Value	Unit	Test Standard
Density	1530	kg/m <sup>3</sup>	ISO 1183
Melt flow rate, MFR	22	g/10min	ISO 1133
MFR temperature	250	°C	ISO 1133
MFR load	2.16	kg	ISO 1133
Water absorption, 23°C-sat	0.3	%	ISO 62
Humidity absorption, 23°C/50%RH	0.2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	9500	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	94	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	1.5	%	ISO 527-2/1A
Flexural modulus, 23°C	8000	MPa	ISO 178
Charpy impact strength, 23°C	32	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	4.5	kJ/m <sup>2</sup>	ISO 179/1eA
Izod impact notched, 23°C	4.4	kJ/m <sup>2</sup>	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
DTUL at 1.8 MPa	205	°C	ISO 75-1, -2
Flammability @1.6mm nom. thickn.	HB	class	UL 94
UL recognition (1.6)	UL	-	UL 94

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	7792	-	Internal
Injection Molding, melt temperature	265	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	70	MPa	ISO 294

### Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.02	%	-
Drying time	2 - 4	h	-
Drying temperature	120 - 140	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 50	°C	-
Feeding zone temperature	190 - 200	°C	-
Zone1 temperature	250 - 260	°C	-
Zone2 temperature	250 - 260	°C	-
Zone3 temperature	255 - 265	°C	-
Zone4 temperature	255 - 265	°C	-
Nozzle temperature	260 - 270	°C	-
Melt temperature	260 - 270	°C	-
Mold temperature	75 - 100	°C	-
Hot runner temperature	260 - 270	°C	-
Speed	Value	Unit	Test Standard
Injection speed	fast	-	-
Screw Speed	Value	Unit	Test Standard
Screw speed diameter, 25mm	90	RPM	-
Screw speed diameter, 40mm	75	RPM	-
Screw speed diameter, 55mm	60	RPM	-

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### Other text information

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#### 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.

#### Longer pre-drying times/storage

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

#### Injection molding

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  $265^{\circ}\text{C}$  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  $110^{\circ}\text{C}$  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.

### Characteristics

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#### Product Categories

Glass reinforced

#### Delivery Form

Pellets

#### Processing

Injection molding

#### Additives

Release agent