PRECITE®
P3 GF 30 natural (6850)

PBT GF30

PRECITE P3 GF 30 natural (6850) is a 30% glass fibre reinforced, medium viscous polybutylene terephthalate (PBT) with high stiffness and toughness as well as high dimensional stability and chemical resistance.

Properties

Modulus	Strength	Impact
10.000 MPa	**145** MPa	**65** kJ/m²

Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min | d.a.m.	**10000 MPa**
Tensile stress at break ISO 527-2	5 mm/min | d.a.m.	**145 MPa**
Tensile strain at break ISO 527-2	5 mm/min | d.a.m.	**3 %**
Flexural modulus ISO 178	2 mm/min | d.a.m.	**10500 MPa**
Flexural strength ISO 178	2 mm/min | d.a.m.	**230 MPa**
Charpy impact strength ISO 179-1/1eU	23°C | d.a.m.	**65 kJ/m²**
Charpy notched impact strength ISO 179-1/1eA	23°C | d.a.m.	**11 kJ/m²**

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	**205 °C**
Melting temperature ISO 11357-3	DSC, 10K/min	**225 °C**

General properties

Density ISO 1183	23°C	**1,53 g/cm³**
Humidity absorption ISO 1110	70°C, 62% r.H.	**0,2 %**
Water absorption ISO 62	23°C, saturated	**0,4 %**
Molding shrinkage ISO 294-4	flow transverse	**0,3 %** **0,9 %**

Electrical Properties

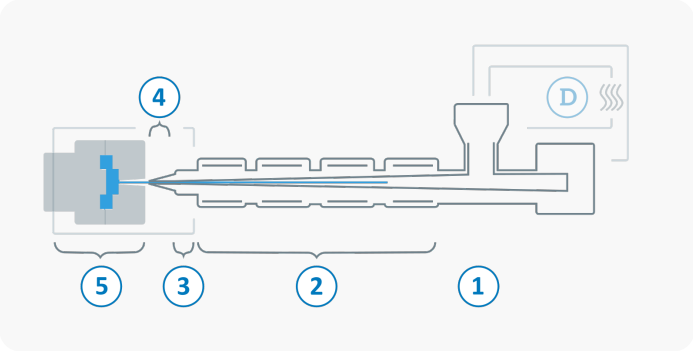
Volume resistivity IEC DIN EN 62631-3-2	d.a.m.	**> 10^{13} Ω x cm**
Volume resistivity DIN DIN EN 62631-3-2	d.a.m.	**> 10^{13} Ω x cm**
Surface resistivity DIN EN 62631-3-2	d.a.m.	**10^{12} Ω**
Comparative tracking index IEC 60112	Test liquid A	**350 V**

Rheological Properties

MVR ISO 1133	250°C/2,16kg	**9 cm³/10 min**

Processing

The listed values are recommendations. Higher values should be used for higher glass loadings. We recommend only de-humidifying or vacuum dryers. Extensive drying can cause filling problem and surface defects.



D	Drying time	3 - 4 h
	Drying temperature (τ <= -30°C)	100 - 120 °C
	Processing moisture	0,02 - 0,04 %
1	Feed section	60 - 80 °C
2	Temperature Zone 1 - Zone 4	250 - 275 °C
3	Nozzle temperature	250 - 280 °C
4	Melt temperature	260 - 275 °C
5	Mold temperature	80 - 100 °C
→	Holding pressure, spec.	300 - 800 bar
←	Back pressure, spec.	30 - 100 bar
	Injection speed	medium to high
	Screw speed	8 - 15 m/min

Due to hydrolysis sensitivity of polyesters, a careful drying of the material before processing is very important. High residual moisture contents causes, in addition to surface defects, a decomposition of the molecular chains and thus reduced mechanical properties. If there are longer interruptions of the process, the cylinder temperature should be lowered. Furthermore, we recommend a thorough cleaning of the screw cylinder with extended dwell time or a material change. Glass-fiber-reinforced polyolefins (PE, PP) have established a particularly good cleaning effect.

Diagrams