

What is PBT GF30

PBT GF30 natural

PBT, glass-fibre reinforced 30 %

PBT GF30 is a special compound based on polybutylene terephthalate (PBT), reinforced with 30 % glass fibres. The glass-fibre reinforcement markedly increases stiffness and strength compared to unreinforced PBT, while retaining very low moisture absorption and high dimensional stability.

Properties

PBT is a semi-crystalline engineering thermoplastic with good chemical resistance, good electrical insulation properties, and high dimensional stability. The 30 % glass-fibre reinforcement markedly increases stiffness and strength compared to unreinforced PBT, while reducing elongation at break.

Unlike polyamides, PBT absorbs very little moisture; dimensional stability and mechanical properties therefore remain largely stable even under varying humidity.

Advantages

- High stiffness through 30 % glass-fibre reinforcement
- Very low moisture absorption, high dimensional stability
- Good electrical insulation properties
- Good chemical resistance

Disadvantages

- Lower elongation at break than unreinforced PBT
- Not resistant to hot water and alkalis (hydrolysis)
- Not generally declared for food contact (see FDA declaration)

Processing

PBT GF30 can be machined using all conventional cutting methods. The glass-fibre content causes faster tool wear than with unreinforced PBT; carbide tools and good extraction of the abrasive dust are recommended.

Because PBT GF30 absorbs very little moisture, conditioning before machining is generally not required.

Typical Applications

PBT GF30 is used wherever high stiffness, dimensional stability, and good electrical insulation properties are required.

- Components for the electrical and electronics industry
- Connectors and insulating parts
- Structural components in mechanical engineering
- Components in vehicle construction

Typical Properties

- Glass-fibre reinforced PBT compound with high stiffness
- Very low moisture absorption, high dimensional stability

Product Examples

- Connectors
- Insulating parts
- Structural components
- Housing parts

Typical Industries

- Electronics
- Mechanical Engineering
- Vehicle Construction

	Test Method	Unit	Value
General Properties			

	Test Method	Unit	Value
Density	DIN EN ISO 1183-1	g / cm ³	1.46
Water absorption (24 h / 96 h, 23 °C)	DIN EN ISO 62	%	0.02 / 0.04
Flammability	UL 94		HB
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	46
Elongation at break	DIN EN ISO 527	%	6
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.400
Unnotched impact strength (Charpy)	DIN EN ISO 179-1eU	kJ / m ²	37
Shore hardness	DIN EN ISO 868	scale D	77
Thermal Properties			
Melting temperature	DIN EN ISO 11357	°C	224
Thermal conductivity	ISO 22007-4	W / (m·K)	0.33
Thermal capacity	ISO 22007-4	kJ / (kg·K)	1.20
Coefficient of linear thermal expansion (23–60 °C)	DIN EN ISO 11359-1/2	10 ⁻⁶ / K	80
Coefficient of linear thermal expansion (23–100 °C)	DIN EN ISO 11359-1/2	10 ⁻⁶ / K	100
Service temperature, long term	Average	°C	110
Service temperature, short term (max.)	Average	°C	200