

Technical Data: PBT (Polybutylene Terephthalate)

Product Description

Define and Grades

Polybutylene Terephthalate (PBT) is a high-performance thermoplastic polymer. It combines good heat resistance, dimensional stability, and low moisture absorption, making it a preferred material for manufacturing automotive parts, electrical connectors, and various consumer and industrial components.

Common grades of PBT used for injection molding at Neway include:

- PBT 1000
- PBT 2000
- PBT 3000
- PBT 4000
- PBT 5000



Features and Applications

Grade	Features	Applications
PBT 1000	High strength and rigidity, good electrical properties, chemical resistance	Electrical connectors, automotive components
PBT 2000	Improved impact resistance, good dimensional stability, low moisture absorption	Automotive under-the-hood parts, electrical housings
PBT 3000	Excellent heat resistance, high creep resistance, low friction and wear	Gears, bearings, bushings, and pump components
PBT 4000	Enhanced flame resistance, good flowability, low outgassing	Electrical switches, connectors, and sockets
PBT 5000	High stiffness, good chemical resistance, low water absorption	Circuit breakers, lighting components

Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm ³)	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(Rockwell R)
PBT 1000	1.31	65	50	2.5	100	80	90	0.3	80
PBT 2000	1.32	70	60	2.8	110	90	100	0.2	85
PBT 3000	1.33	75	70	3	120	100	110	0.4	90
PBT 4000	1.34	80	80	3.2	130	110	120	0.5	95
PBT 5000	1.35	85	90	3.5	140	120	130	0.6	100

Note

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | www.newayprecision.com | Contact Neway



PBT Injection Molding

Polybutylene Terephthalate

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Benefits of Material Grades

PBT 1000

High Tensile Strength: PBT 1000 offers a solid tensile strength of 65 MPa, making it suitable for parts requiring robust mechanical properties.

Excellent Heat Resistance: With a heat deflection temperature of 90°C, it performs well in applications exposed to elevated temperatures.

Electrical Insulation: Its electrical insulating properties are ideal for electrical connectors, switches, and components.



PBT 2000



Enhanced Tensile Elongation: PBT 2000 boasts a tensile elongation of 60%, providing flexibility and toughness.

Improved Izod Impact Strength: This grade offers an Izod impact strength of 90 J/m, making it suitable for impact-resistant parts.

Automotive Components: It is commonly used in automotive components like bumpers, grille parts, and interior trim due to its impact resistance.

PBT 3000

Higher Flexural Strength: PBT 3000 exhibits a flexural strength of 120 MPa, making it suitable for structural components.

Superior Heat Deflection: With a temperature of 110°C, it performs well in applications where heat resistance is crucial.

Precision Gears: Its strength and heat resistance combination makes it a preferred choice for precision gears and bearings.



PBT 4000



Excellent Tensile Elongation: PBT 4000 offers a tensile elongation of 80%, providing strength and flexibility.

Increased Hardness: With a hardness of 95 Rockwell R, it's well-suited for parts requiring hardness and toughness.

Electrical Housings: Its balance of properties makes it suitable for electrical housings and enclosures in various industries.

PBT 5000

High Tensile Strength: PBT 5000 boasts a tensile strength of 85 MPa, ensuring durability in demanding applications.

Superior Chemical Resistance: It resists chemicals, making it a good choice for parts exposed to corrosive environments.

Medical Devices: PBT 5000 is commonly used in medical device components due to its chemical resistance and strength.



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