



ENSITEP® BT (polybutylene terephthalate)

ENSITEP BT is an unreinforced thermoplastic polyester derived from polybutylene terephthalate. Its excellent wear and impact resistance, low coefficient of friction, high flexural modulus, and superior dimensional stability make it a versatile material for

designing mechanical and electro-mechanical parts. Because ENSITEP BT has no centerline porosity, the possibility of fluid absorption and leakage is virtually eliminated.

- Excellent wear resistance
- Very good impact resistance
- Low coefficient of friction
- Very good chemical resistance
- No centerline porosity eliminates the possibility of fluid absorption and leakage
- Good electrical insulator
- High mechanical strength
- Excellent hardness and stiffness
- Good weather resistance
- In compliance with FDA regulation CFR 177.1630 for use in contact with food
- Low water absorption

ENSITEP BT's superior wear and impact resistance and lack of centerline porosity give it an advantage over other materials for applications involving solvents, chemicals, and food products. ENSITEP BT is also used in water purification systems, printing equipment, textile components, food-handling equipment, and valves.

Typical Property Values

| Properties | ASTM Test Method | Units | ENSITEP® BT |
|--|------------------|---------------------|------------------------|
| PHYSICAL | | | |
| Density | D792 | lbs/in ³ | 0.047 |
| Water Absorption, 24 hours, 73°F | D570 | % | 0.08 |
| MECHANICAL | | | |
| Tensile Strength at break, 73°F | D638 | ksi | 8.69 |
| Tensile Modulus at yield, 73°F | D638 | 100 ksi | 4.16 |
| Elongation at break, 73°F | D638 | % | 300 |
| Elongation at yield, 73°F | D638 | % | 5.39 |
| Flexural Strength, 73°F | D790 | ksi | 12.00 |
| Flexural Modulus, 73°F | D790 | 100 ksi | 3.30 |
| Shear Modulus | | 100 ksi | 1.51 |
| Izod Impact Strength, Notched, 73°F | D256 | ft-lbs/in | 1.5 |
| Rockwell Hardness | D785 | M Scale | 72 |
| THERMAL | | | |
| Heat Deflection, 264 psi | D648 | °F | 130 |
| 66 psi | - | °F | 310 |
| Coefficient of Linear Thermal Expansion | D696 | in/in/°F | 4.64 |
| Conductivity | C177 | Btu-in/hr/ft | 1.46 |
| Specific Heat | - | Btu/lbs-°F | 0.31 |
| ELECTRICAL | | | |
| Volume Resistivity, 73°F | D257 | ohm-cm | 1.0 x 10 ¹⁶ |
| Dielectric Constant, 100% Hz | D150 | - | 3.20 |
| Dissipation Factor, 100 Hz, 73°F | D150 | - | 0.001 |
| Dielectric Strength, short, 0.125" thickness | D149 | V/mil | 400 |

This information is only to assist and advise you on current technical knowledge and is given without obligation or liability. All trade and patent rights should be observed. All rights reserved.

Material Availability--

Rods: Diameters: 1/4 inch to 8 inches
Length: 10 feet

Plates: 1/4" to 3-1/2" thickness inclusive are 24 x 48 inches
3-3/4" to 4" thickness inclusive are 12 x 48 inches

Profiles, tubes, and special sizes are custom-produced on



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