# UNILATE® Lf

Polybutylene Terephthalate

Nytef Plastics, Ltd.

## Message:

UNILATE PBT is a semi-crystalline polybutylene terephthalate (PBT) material that exhibits excellent rigidity, toughness, and machinability. Additionally, UNILATE PBT offers dimensional stability and wear resistance that meets or exceeds that of nylon and acetal. Due to its superior chemical resistance and food contact approvals, UNILATE is the preferred material for components in wet and dry food processing applications such as pistons, valves, feed screws, and forming/extrusion dies. For applications involving high speed wear, UNILATE is available in an internally lubricated grade, UNILATE Lf, that provides a much lower coefficient of friction compared to non-lubricated grades.
PRODUCT ATTRIBUTES
225°F continuous use temperature
High strength and stiffness
Excellent toughness
Superior wear resistance
Chemically resistant to chlorine and caustic/acidic cleaning agents
Better UV resistance than acetal or nylon
Very low moisture absorption
Easily machined and fabricated
FDA, USDA, NSF, and 3-A compliant
Very high "value to cost" ratio
INDUSTRIES
Food and dairy processing
Material handling equipment
Fluid handling
Electronics manufacturing
Automotive
APPLICATIONS
Pistons
Valves
Manifolds
Food product forming dies
Timing screws
Scraper blades
Wear strips
Pump components
Gears
Bushings and bearings

| General Information | |
|---|---|
| Additive | Lubricant |
| Features | Acid Resistant |
| | Chlorine Resistant |
| | Food Contact Acceptable |
| | Good Chemical Resistance |
| | Good Dimensional Stability |
| | Good Toughness |
| | Good Wear Resistance |
| | High Stiffness |
| | High Strength |
| | Low Friction |
| | Low Moisture Absorption |

| | |
|---|---|
| | Lubricated |
| | UV Absorbing |
| Uses | Automotive Applications |
| | Bearings |
| | Bushings |
| | Electrical/Electronic Applications |
| | Fluid Handling |
| | Food Service Applications |
| | Gears |
| | Molds/Dies/Tools |
| | Pump Parts |
| | Valves/Valve Parts |
| | Wear Strip |
| Agency Ratings | FDA Unspecified Rating |
| | NSF Unspecified Rating |
| | USDA 3A |
| | USDA Unspecified Approval |
| Forms | Preformed Parts |
| | Rod |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.35 | g/cm³ | ASTM D792 |
| Water Absorption | | | ASTM D570 |
| 24 hr | 0.080 | % | |
| Saturation | 0.50 | % | |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Rockwell Hardness (R-Scale) | 115 | | ASTM D785 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 2520 | MPa | ASTM D638 |
| Tensile Strength (Yield) | 55.2 to 58.6 | MPa | ASTM D638 |
| Tensile Elongation (Break) | 25 to 100 | % | ASTM D638 |
| Flexural Modulus | 2410 | MPa | ASTM D790 |
| Flexural Strength | 70.3 | MPa | ASTM D790 |
| Compressive Strength | 72.4 | MPa | ASTM D695 |
| Coefficient of Friction | 0.080 | | ASTM D1894 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Notched Izod Impact | 48 | J/m | ASTM D256 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |

| | | | |
|---|---|---|---|
| Deflection Temperature Under Load (0.45 MPa, Unannealed) | 152 | °C | ASTM D648 |
| Continuous Use Temperature | 107 | °C | Internal Method |
| Peak Melting Temperature | 225 | °C | ASTM D3418 |
| CLTE - Flow | 8.6E-5 | cm/cm/°C | ASTM D696 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity | > 1.0E+15 | ohms·cm | ASTM D257 |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating (6.10 mm) | HB | | UL 94 |



## Recommended distributors for this material

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