UNILATE® PBT

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	
Features	Acid Resistant
	Chlorine Resistant
	Food Contact Acceptable
	Good Chemical Resistance
	Good Dimensional Stability
	Good Toughness
	Good Wear Resistance
	High Stiffness
	High Strength
	Low Moisture Absorption
	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	1.31	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)	117		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2830	MPa	ASTM D638
Tensile Strength (Yield)	62.1 to 65.5	MPa	ASTM D638
Tensile Elongation (Break)	25 to 100	%	ASTM D638
Flexural Modulus	2930	MPa	ASTM D790
Flexural Strength	82.7	MPa	ASTM D790
Compressive Strength	89.6	MPa	ASTM D695
Coefficient of Friction	0.25		ASTM D1894
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	53	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (0.45 MPa, Unannealed)	154	°C	ASTM D648
Continuous Use Temperature	107	°C	Internal Method
Peak Melting Temperature	225	°C	ASTM D3418

CLTE - Flow	8.1E-5	cm/cm/°C	ASTM D696
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	> 1.0E+15	ohms·cm	ASTM D257
Dielectric Strength [1]	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.30		
1 MHz	3.10		
Dissipation Factor (60 Hz)	2.0E-3		ASTM D150
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (6.10 mm)	HB		UL 94
NOTE			
1.	Method A (Short-Time)		

Recommended distributors for this material

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