# UNIPET® PET

## Polyethylene Terephthalate

Nytef Plastics, Ltd.

### Message:

UNIPET PET from Nytef Plastics is a semicrystalline polyester terephthalate (PET) polymer that exhibits excellent strength, rigidity, and machinability. Additionally, this material offers dimensional stability and wear resistance that meets or exceeds that of nylon or acetal. Due to it's superior chemical resistance and food contact approvals, UNIPET PET stock shapes are the preferred material for components in food processing applications such as pistons, valves, feed screws, and

food product forming and extrusion dies. Additionally, the low moisture absorption and low rate of thermal expansion offered by UNIPET makes it ideal for demanding applications that require close tolerance, precisely machined component parts. UNIPET PET machines easily and is offered by Nytef Plastics in a complete range of extruded rod and heavy gauge plate sizes.

UNIPET PET ATTRIBUTES 230°F continuous use temperature High strength and stiffness Superior wear resistance Chemically resistant to chlorine and caustic/acidic cleaning agents Improved UV resistance compared to acetal or nylon Very low moisture absorption Easily machined and fabricated FDA, USDA, and 3-A Dairy Compliant Very high "Value to Cost" ratio TYPICAL 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

#### General Information

#### Features

Acid Resistant Chlorine Resistant Food Contact Acceptable Good Chemical Resistance Good Dimensional Stability Good UV Resistance Good Wear Resistance High Rigidity High Strength Highly Crystalline Low Moisture Absorption Machinable

Uses

Automotive Applications

	Electrical/Electronic Applications		
	Fluid Handling		
	Food Service Applications		
	Molds/Dies/Tools		
	Valves/Valve Parts		
Agency Ratings	FDA Unspecified Rating		
	USDA 3A		
	USDA Unspecified Approval		
Appearance	White		
Forms	Preformed Parts		
	Rod		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.34	g/cm³	ASTM D792
Water Absorption			ASTM D570
24 hr	0.10	%	
Saturation	0.90	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	125		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3240	MPa	ASTM D638
Tensile Strength (Yield)	84.1	MPa	ASTM D638
Tensile Elongation (Break)	25	%	ASTM D638
Flexural Modulus	3380	MPa	ASTM D790
Flexural Strength	121	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	32	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	87.8	°C	ASTM D648
Continuous Use Temperature	110	°C	UL 746
Peak Melting Temperature	255	°C	ASTM D3418
CLTE - Flow	6.5E-5	cm/cm/°C	ASTM D696
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+14	ohms·cm	ASTM D257
Dielectric Strength <sup>1</sup>	18	kV/mm	ASTM D149
Dielectric Constant (60 Hz)	3.40		ASTM D150
Dissipation Factor (60 Hz)	2.0E-3		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating	НВ		UL 94

NOTE

1.

Method A (Short-Time)

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# Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

