

# Ertalyte® TX PET-P

## FDA Compliant PET-P Outwears Nylon, Acetal & Other Polyester Materials

Ertalyte® TX is an internally lubricated thermoplastic polyester providing enhanced wear and inertness over general purpose nylon (PA) and acetal (POM) products. Containing uniformly dispersed solid lubricant, Ertalyte® TX provides a lower wear rate and coefficient of friction than unmodified polyesters like PET or PBT and even internally lubricated materials like Delrin® AF Blend. Ertalyte® TX excels under both high pressure and high velocity conditions. It is also ideally suited for applications involving soft metal and plastic mating surfaces.



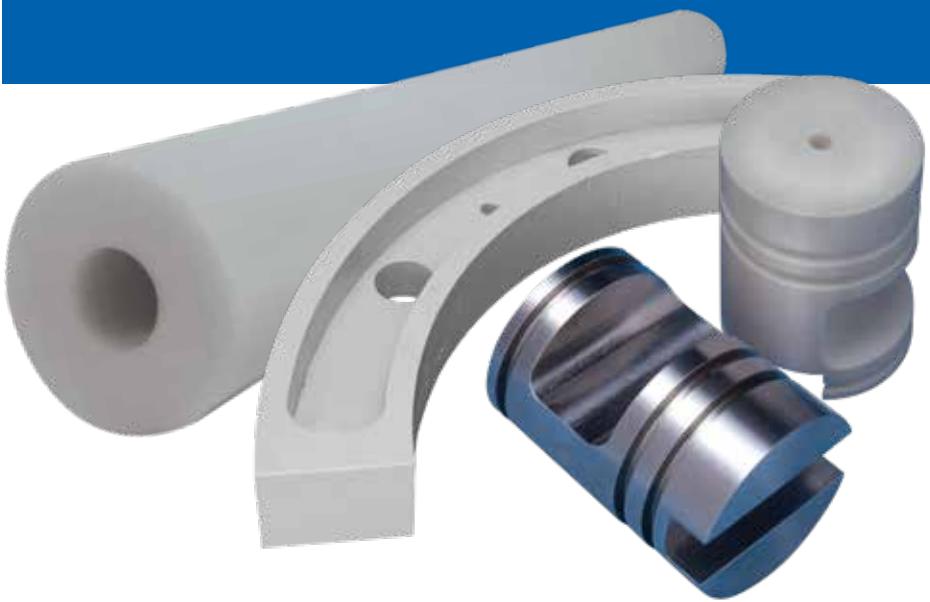
### Key Benefits

- Outstanding wear resistance
- Non-staining
- Excellent dimensional stability
- FDA and EU Food Compliant
- High Limiting PV
- Low and constant coefficient of friction (low slip stick)
- Low water absorption
- Works in wet & dry environments

Ertalyte® TX excels in Dosing Systems where food compliancy, chemical resistance and low wear are critical. Replacing metal parts with Mitsubishi Chemical Advanced Materials thermoplastic polyester also reduces maintenance costs and eliminates the need for lubrication.

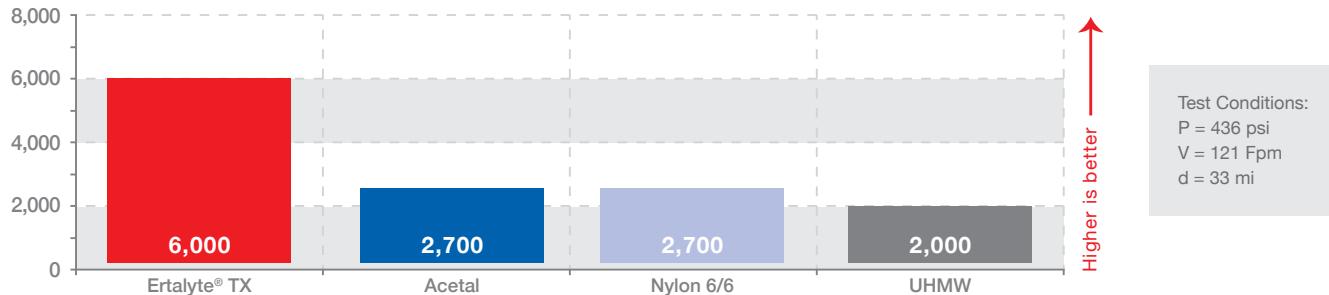
### Applications

- Rollers and wheels without bearings
- Linear bearings
- Wear and slide pads
- Dynamic seals
- Scraper blades
- Thrust washers
- Valve seats
- Journal bearings
- Dosing piston / valve



## Materials Comparison

Practical Limiting PV (per MCAM TM 55007)



## Data Sheet

		Metric		Imperial	
		Test Method ISO	Average Value	Test Method ASTM	Average Value
Mechanical Properties	Density (Specific Gravity @ 73°F)	ISO 1183-1	1.44 g/cm³	ASTM D792	0.0520 lb/in³
	Tensile Strength @ 23°C (73°F)	ISO 527-1/-2	76 MPa	ASTM D638	10,500 psi
	Tensile Strength @ 65°C (150°F)	ISO 527-1/-2	-	ASTM D638	7,000 psi
	Tensile Elongation (at break) @ 23°C (73°F)	ISO 527-1/-2	5%	ASTM D638	5%
	Tensile Modulus of Elasticity @ 23°C (73°F)	ISO 527-1/-2	3,300 MPa	ASTM D638	500 ksi
	Flexural Strength @ 23°C (73°F)	ISO 178	122 MPa	ASTM D790	14,000 psi
	Flexural Modulus of Elasticity @ 23°C (73°F)	ISO 178	3,160 MPa	ASTM D790	360 ksi
	Compressive Stress / Strength @ 10% Deformation @ 23°C (73°F)	ISO 604	100 MPa	ASTM D695	15,250 psi
	Compressive Modulus of Elasticity @ 23°C (73°F)	ISO 604	2,700 MPa	ASTM D695	400 ksi
	Shear Strength @ 23°C (73°F)	-	-	ASTM D732	8,500 psi
	Hardness, Rockwell M @ 23°C (73°F)	ISO 2039-2	M94	ASTM D785	M96
	Hardness, Rockwell R @ 23°C (73°F)	ISO 2039-2	-	ASTM D785	R126
	Hardness, Durometer, Shore "D" Scale @ 23°C (73°F)	ISO 868	D81	ASTM D2240	D84
	Charpy Impact Strength Unnotched @ 23°C (73°F)	ISO 179-1/1eU	30 kJ/m²	N/A	N/A
	Charpy Impact Strength Notched @ 23°C (73°F)	ISO 179-1/1eA	2.5 kJ/m²	ASTM D256 Type "A"	0.4 ft. lb./in. <sup>2</sup>
Thermal Properties	Coefficient of Friction – (Dry vs. Steel) Dynamic	ISO 7148-2	0.15-0.22	MCAM TM 55007	0.19
	K (wear) Factor, $\times 10^{-10}$	ISO 7148-2	2 $\mu\text{m}/\text{km}$	MCAM TM 55010	35 $\text{in}^3\text{-min}/\text{ft-lb-hr}$
	Limiting Pressure Velocity @ 0.1m/s	-	0.26 MPa.m/s	MCAM TM 55007	6,000 psi-ft/min
	Coefficient of Linear Thermal Expansion 23-6 °C (-40-300°F)	ASTM E831 (TMA)	$65 \times 10^{-6}$ m/(m.K)	ASTM E831 (TMA)	$45 \mu\text{in}/\text{in-}^{\circ}\text{F}$
	Heat Deflection Temperature @ 1.8 MPa (264 psi)	ISO 75 -1/-2	75°C	ASTM D648	180°F
Electrical Properties	Melting Point (crystalline) peak	ISO 11357-1/-3	245°C	ASTM D3418	491°F
	Continuous Service Temp in Air (Max.) <sup>(1)</sup>	-	100°C	-	210°F
	Thermal Conductivity	-	0.29 W/(K.m)	F433	1.9 BTU-in/hr-ft <sup>2</sup> -°F
	Surface Resistivity	EOS/ESD S11.11	$>10^{13}$ ohms/square	EOS/ESD S11.11	$>1^{13}$ ohms/square
	Dielectric Constant	IEC 60250	3.2	ASTM D150	3.6
Other	Dielectric Strength	ISO 60243-1	21 kV/mm	ASTM D149	533 kV/in
	Dissipation Factor	IEC 60250	0.014	ASTM D150	0.02
	Flammability @ 3.1mm (1/8 in.) <sup>(2)</sup>	UL 94	HB	UL-94	HB
Other	Water Absorption Immersion, 24 Hours	ISO 62	0.060% by wt.	ASTM D570 <sup>(3)</sup>	0.060% by wt.
	Water Absorption Immersion, Saturation	-	0.47% by wt.	ASTM D570 <sup>(3)</sup>	0.47% by wt.

(1) Data represents our estimated maximum long-term service temperature based on practical field experience. (2) Estimated rating based on available data. The UL-94 Test is a laboratory test and does not relate to actual fire hazard. (3) Specimens: 1/8" thick x 2" diameter or square.

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