

## TECAPET® PET and 1400® PET (Polyethylene Terephthalate)

TECAPET®/1400® are both unreinforced, semi-crystalline thermoplastic polyester derived from polyethylene terephthalate. Their excellent wear 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 TECAPET®/1400® has no centerline porosity, the possibility of fluid absorption and leakage is virtually eliminated.

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

TECAPET®/1400® both have superior wear resistance and lack of centerline porosity give it an advantage over other materials for applications involving solvents, chemicals, and food products. TECAPET®/1400® can also be used in water purification systems, printing equipment, textile components, food-handling equipment, and valves.

Primary Specification (Resin) (Typical): ASTM-D-5927 TPES0211

Shapes Specification (Typical): ASTM-D-6261 S-TPES0211

Property	ASTM Test Method	Units	TECAPET® PET	1400HI® PET
<b>Physical</b>				
Density	D792	lbs/in <sup>3</sup>	0.0499	0.051
Specific Gravity	D792	g/cc	1.38	1.4
Water Absorption, @ 24 hours, 73°F	D570	%	0.1	0.1
@ Saturation, 73°F	D570	%	0.5	0.9
<b>Mechanical</b>				
Tensile Strength @ Yield, 73°F	D638	psi	12,500	12,330
Tensile Modulus	D639	psi	470,000	471,000
Elongation @ Break, 73°F	D638	%	20	23
Flexural Strength, 73°F	D790	psi	17,600	-
Flexural Modulus, 73°F	D790	psi	430,000	-
Compressive Strength	D695	psi	-	15,450
Izod Impact Strength, 73°F	D256	ft-lbs/in	0.7	-
Rockwell Hardness, 73°F	D785	R Scale	94	-
Shore Hardness	-	D Scale	-	84
Wear Factor Against Steel, 40 psi, 50 fpm	D3702	in <sup>3</sup> /hr x 1/PV	210 x 10 <sup>-10</sup>	-
Static Coefficient of Friction	D3702	-	0.19	0.18-0.25
Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	0.25	0.23-0.29
<b>Thermal</b>				
Heat Deflection Temperature, @ 66 psi	D648	°F	240	-
@ 264 psi	D648	°F	175	175
Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.9 x 10 <sup>-5</sup>	3.9 x 10 <sup>-5</sup>
Maximum Servicing Temperature, Intermittent	-	°F	320	320
Long Term	-	°F	230	212
Specific Heat	UL746B	BTU/lb-°F	0.28	-
Thermal Conductivity	-	-	2.01	2.0
Vicat Softening Point	-	°F	-	-
Melting Point	D2133	°F	490	490
Flammability	UL94	-	HB	HB

Property	ASTM Test Method	Units	TECAPET® PET	1400® PET
<b>Electrical</b>				
Volume Resistivity	D257	ohm-cm	10 <sup>15</sup>	-
Dielectric Strength	D149	V/mil	400	-
Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	3.4	-
Dissipation Factor, @ 60 HZ, 73°F	D150	-	0.002	-

*NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. All values at 73°F (23°C) unless otherwise noted.*