

TECAPET white - Stock Shapes (rods, plates, tubes)

Chemical Designation

PET (Polyethylene terephthalate)

Colour

white

Density

1.38 g/cm³

Main features

- very good chemical resistance
- resistant to cleaning agents
- excellent wear properties
- excellent strength and stiffness
- low moisture absorption
- improved surface hardness
- resistance against high energy radiation

Target Industries

- food engineering
- food processing
- engineering for beverage filling systems
- packaging and paper machinery
- semiconductor technology
- printing machines
- mechanical engineering
- pharmaceutical industry

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)		470,000	psi	ASTM D 638	(1) Injection molded specimen
Tensile strength at yield	@ 73 °F	10,000	psi	ASTM D 638	(2) Injection molded specimen
Elongation at yield (tensile test)	@ 73 °F	4	%	ASTM D 638	(3) Injection molded specimen
Elongation at break (tensile test)	@ 73 °F	12	%	ASTM D 638	
Flexural strength	@ 73 °F	15,500	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	470,000	psi	ASTM D 790	
Compression strength	@ 73 °F 1% strain	3,600	psi	ASTM D 695	
Compression strength	@ 73 °F 10% strain	14,000	psi	ASTM D 695	
Compression modulus	@ 73 °F	345,000	psi	ASTM D 695	
Impact strength (Izod)	@ 73 °F	0.53	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F, M scale	93		ASTM D 785	
Rockwell hardness	@ 73 °F, R scale	125		ASTM D 785	
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.25	%	ASTM D 3702	1)
Coefficient of friction	Static	0.19	%	ASTM D 3702	2)
Wear rate	Against Steel, 40 psi, 50 fpm	210*10 ⁻¹⁰	in ³ -min/ft-lbs-hr	ASTM D 3702	3)
Thermal properties	condition	value	unit	test method	comment
Melting temperature		490	°F	-	1)
Heat distortion temperature	@264 psi	175	°F	ASTM D 648	(1) Per ASTM D3418 (2) Data obtained from public source
Heat distortion temperature	@ 66 psi	240	°F	ASTM D 648	
Service temperature	Long Term	230	°F	-	
Service temperature	Intermittent	320	°F	-	
Thermal expansion (CLTE)		3.9	*10 ⁻⁵ in/in/°F	ASTM D 696	2)
Specific heat		0.28	BTU/lb-F°	-	
Thermal conductivity		2.01	BTU-in/hr-ft ² -°F	-	
Electrical properties	condition	value	unit	test method	comment
volume resistance		10 ¹⁵	Ω*cm	ASTM D 257	1)
Dielectric strength		400	V/mil	ASTM D 149	2)
Dissipation factor	@ 60 Hz, 73 °F	0.02	%	ASTM D 150	3)
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	3.4	%	ASTM D 150	4)
Other properties	condition	value	unit	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.04	%	ASTM D 570	
Moisture absorption	@ saturation, 73 °F	0.50	%	ASTM D 570	
Flammability (UL94)	3.00 mm Horizontal burn; Thckns: 3.25mm	HB		-	

→ Resin specification:
ASTM D5927-17 TPES0211
Shapes specification:
ASTM D 6261-14 S-TPES021012234000

This information reflects the current state of our knowledge and is intended only to assist and advise. It is given without obligation or liability. It does not assure or guarantee chemical resistance, quality of products or their suitability in any legally binding way. Values are not minimum or maximum values, but guidelines that can be used for comparative purposes in material selection. They are within the normal range of product properties and do not represent guaranteed property values. Testing under individual application circumstances is always recommended. Data is obtained from extruded shapes material unless otherwise noted. References to FDA compliance refer to the resins from which the products were made unless otherwise noted. All trade and patent rights should be observed. All rights reserved. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com.