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

Chemical Designation
PET (Polyethylene terephthalate)

Colour
white

Density
1.38 g/cm^3

Main features
- very good chemical resistance
- resistent 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 (2) Injection molded specimen (3) Injection molded specimen
Tensile strength at yield	@ 73 °F	10,000	psi	ASTM D 638		
Elongation at yield (tensile test)	@ 73 °F	4	%	ASTM D 638		
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}	in³-min/ft-lbs-hr	ASTM D 3702	3)	

Thermal properties	condition	value	unit	test method		comment
Melting temperature		490	°F	-	1)	(1) Per ASTM D3418 (2) Data obtained from public source
Heat distortion temperature	@264 psi	175	°F	ASTM D 648		
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)	(1) Injection molded specimen (2) Injection molded specimen (3) Injection molded specimen (4) Injection molded specimen
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

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