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

Chemical Designation
PET (Polyethylene terephthalate)

Colour
white opaque

Density
1.36 g/cm^3

Main features
- very high strength
- good chemical resistance
- electrically insulating
- easy to polish
- good slide and wear properties
- good weldable and bondable
- good machinability
- high toughness

Target Industries
- mechanical engineering
- automotive industry
- electronics
- energy industry
- food technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2		(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0,5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (tensile test)	1mm/min	3100	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	79	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	10	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	121	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	3200	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	19/35/83	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	81	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m^2	DIN EN ISO 179-1eA		
Shore hardness	D	84		DIN EN ISO 868		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		81	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		244	°C	DIN EN ISO 11357		
Service temperature	short term	170	°C		2)	
Service temperature	long term	110	°C			
Thermal expansion (CLTE)	23-60°C, long.	8	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	10	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.2	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.31	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10^{14}	Ω	-	
volume resistivity		10^{14}	Ω*cm	-	
Resistance to tracking (CTI)		600	V	DIN EN 60112	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) - poor resistance (3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		-		-	2)	
Resistance to weathering		-				
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)	

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