Material Data Sheet, July 2010

TECAPET sw

Chemical Designation :	Polyethylenterephthalat
DIN-Abbreviation:	PET
Colours, fillers:	black

Main features

- very strong
- wear resistant
- very strong and tough
- resistant to numerous detergents
- easily welded
- easily polished
- good sliding properties
- no electrical insulation
- tough
- not resistant to hot water over 60° C
- easily bonded
- easily machined

Preferred Fields

- mechanical engineering
- precision engineering
- automotive engineering
- domestic appliance
- transport and conveyor technology
- food technology
- electrical engineering
- medical technology

Applications

Plugs, friction plates, tool carriers, housing parts, rollers, plain bearing, gear wheels, agitators and kneading elements, seals

Properties

Mechanical	**dry / moist**		**standard**
Tensile strength at yield	88	MPa	DIN EN ISO 527
Elongation at yield	4	%	DIN EN ISO 527
Tensile strength at break		MPa	
Elongation at break	11	%	
Modulus of elasticity in tension	3200	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test		MPa	
Hardness	170		DIN 53 456 (Kugeldruckhärte)
Impact strength 23º C (Charpy)	n.b.	KJ/m²	DIN EN ISO 179 (Charpy)
Creep rupture strength after 1000 h with static load	36	MPa	
Time yield limit for 1% elongation after 1000 h	13	MPa	
Co-efficient of friction p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground	0,25		
Wear p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground	0,35	µm/km	

Thermal	**dry / moist**		**standard**
Crystalline melting point	245	°C	DIN 53 765
Glass transition temperature	70	°C	DIN 53 765
Heat distortion temperature HDT, Method A	95	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	170	°C	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	170	°C	
long term	110	°C	
Thermal conductivity (23º C)	0,24	W/(K·m)	
Specific heat (23º C)	1,1	J/g.K	
Coefficient of thermal expansion (23-55ºC)	7	10^{-5}1/K	DIN 53 752

Properties

Electrical	**dry / moist**		**standard**
Dielectric constant (10^6 Hz)			
Dielectric loss factor (10^6 Hz)			
Specific volume resistance		*cm	
Surface resistance			
Dielectric strength		kV/mm	
Resistance to tracking			

Miscellaneous	**dry / moist**		**standard**
Density	1,38	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	0,25	%	DIN EN ISO 62
Water absorption to equilibrium	0,5	%	DIN EN ISO 62
Flammability acc. to UL standard 94	HB		

(1) Testing of semi-finished products

The above information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed. Unless otherwise stated, these values represent averages taken from injection moulding samples, dry as moulded. We reserve the right to make technical alterations.