













Material Data Sheet









PETP natural

Chemical Designation : Polyethyleneterephthalate
 DIN-Abbreviation: PET
 Colours, fillers: opaque

Main features

-  very strong
 -  good sliding properties
 -  easily bonded
 -  easily machined
 -  wear resistant
 -  not resistant to hot water over 60° C
 -  tough
 -  easily welded
 -  resistant to numerous solvents
 -  easily polished
 -  very good electrical insulation
 -  very rigid
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Preferred Fields

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

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

Properties

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Mechanical	dry / moist		standard
Tensile strength at yield	88	MPa	DIN EN ISO 527
Elongation at yield	4	%	DIN EN ISO 527
Modulus of elasticity in tension	3100	MPa	DIN EN ISO 527
Hardness	170		DIN 53 456 (Kugeldruckhärte)
Impact strength 23° C (Charpy)	n.b.	KJ/m ²	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/mm ² v=0,6 m/s	0,25		

on steel, hardened and ground

Wear 0,35 $\mu\text{m}/\text{km}$
 $p = 0,05 \text{ N}/\text{mm}^2 v = 0,6 \text{ m}/\text{s}$
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Thermal	dry / moist		standard
Crystalline melting point	245	$^{\circ}\text{C}$	DIN 53 765
Glass transition temperature	70	$^{\circ}\text{C}$	DIN 53 765
Heat distortion temperature HDT, Method A	95	$^{\circ}\text{C}$	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	170	$^{\circ}\text{C}$	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	170	$^{\circ}\text{C}$	
long term	110	$^{\circ}\text{C}$	
Thermal conductivity (23°C)	0,24	$\text{W}/(\text{K}\cdot\text{m})$	
Specific heat (23°C)	1,1	$\text{J}/\text{g}\cdot\text{K}$	
Coefficient of thermal expansion ($23\text{-}55^{\circ}\text{C}$)	7	$10^{-5}/\text{K}$	DIN 53 752

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Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)	3,2		DIN 53 483, IEC-250
Dielectric loss factor (10^6 Hz)	0,0021		DIN 53 483, IEC-250
Specific volume resistance	10^{13}	$\Omega\cdot\text{cm}$	DIN IEC 60093
Surface resistance	10^{15}	Ω	DIN IEC 60093
Dielectric strength	60	kV/mm	DIN 53 481, IEC-243, VDE 0303 Teil 2
Resistance to tracking	KC 350		DIN 53 480, VDE 0303 Teil 1

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Miscellaneous	dry / moist		standard
Density	1,37	g/cm^3	DIN 53 479
Moisture absorption ($23^{\circ}\text{C}/50\text{RH}$)	0,25	%	DIN EN ISO 62
Water absorption to equilibrium	0,5	%	DIN EN ISO 62
Flammability acc. to UL standard 94	HB		
Resistance to hot water, washing soda:	-		
Resistance to weathering	-		

(1) Testing of semi-finished products

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