

# PET | FURTHER TECHNOPOLYMERS

## ► Main features

PET is a material of high density, rigidity and hardness, very stable dimensionally. It has excellent mechanical strength, wear resistance and extraordinary smoothness given by a low coefficient of friction (because self-lubricating). In addition, PET has good creep resistance, low moisture absorption, high acid resistance and can be used at high temperatures (up to 110 °C).

## ► Applications

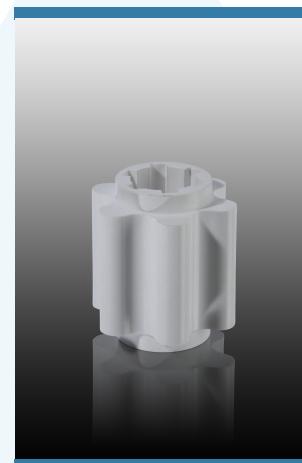
Cams  
Bushing  
Bearings  
Gears  
Pads  
Sliding guides  
Mechanical details in general

## ► FDA Compatibility YES

## ► Application sectors

Building and lifting industry  
Recycling and waste management  
Medical and Pharmaceutical  
Food Automotive  
Mechanic Naval  
Electrical and Semiconductor

## ► Available colours



## PHYSICAL PROPERTIES

## REGULATIONS

## UM

## PET

PHYSICAL PROPERTIES		REGULATIONS	UM	PET
Density	DIN53479	g/cm <sup>3</sup>	1.37	
Water absorption (50% at 23 °C)	**DIN53495	%	0.2	
Maximum temp. for use in the air for short duration	-	°C	170	
Maximum temperature of use in continuous air	-	°C	110	
Minimum temperature of use in continuous air	-	°C	-20	

## MECHANICAL PROPERTIES

## REGULATIONS

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## PET

Yield stress/tensile strength ( $\sigma_s$ )	*DIN53455 (4)	N/mm <sup>2</sup>	81
Elongation at break ( $\epsilon_s$ )	ISO 527	%	10
Breaking load ( $\sigma_r$ )	DIN53455	N/mm <sup>2</sup>	-
Elongation at break ( $\epsilon_r$ )	ISO 527	%	10
Impact resistance	*DIN53453	kJ/m <sup>2</sup>	NR
Impact resistance, notched test	*DIN53453	kJ/m <sup>2</sup>	4
Rockwell hardness	DIN53465	Scala M	M96
Compression test, load 1% deform. nominal	*DIN53454 (3)	N/mm <sup>2</sup>	105
Elasticity module	*DIN53457 (5)	N/mm <sup>2</sup>	3100

## THERMIC PROPERTIES

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Melting temperature	-	°C	244
VICAT softening temperature	DIN53460	°C	-
Deformation temperature under bending load	DIN53461	°C	80
Coefficient of linear thermal expansion ( $\alpha$ )	DIN53752	K <sup>-1</sup> X10 <sup>-4</sup>	0.7÷0.8
Thermal conductivity at 23°	DIN52612	W/(Kxm)	0.31

## ELECTRICAL PROPERTIES

## REGULATIONS

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Volume resistivity	**DIN53482	Ω/cm	10 <sup>14</sup>
Surface resistivity	**DIN53482	Ω	10 <sup>14</sup>
Dielectric constant at 10 <sup>3</sup> Hz (on thickness of 1 mm.)	**DIN53483	-	-
Dielectric dissipation factor ( $\tan \delta$ ) a 10 <sup>3</sup> Hz	**DIN53483	-	-
Dielectric strength (on thickness of 1 mm.)	**DIN53481	kV/mm	60
Electrical leakage resistivity	112/030TI	-	CTI600

## OTHER PROPERTIES

## REGULATIONS

## UM

## PET

Possibility of gluing	-	-	No
Absence of physiological risks	FDA	-	Yes
Dry friction coefficient on steel	DIN53375	-	0.25
Flammability	UL94	-	HB
UV stability	-	-	-

\* : MEASUREMENTS ON TEST TUBES IN ANHYDROUS STATE  
\*\* : MEASUREMENTS ON EQUILIBRIUM TUBES  
WITH U.R. 50% AT A TEMPERATURE OF 23° C

(3): ON CYLINDERS Ø 12X30 MM  
(5): TRACTION SPEED 1 MM / MIN

(4): TRACTION SPEED 5 MM/MIN  
(6): TRACTION SPEED 20 MM/MIN