

## TECAPEEK PVX

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Chemical Designation:	Polyetheretherketone
DIN Abbreviation:	PEEK
Colour, Filler:	Black 10% carbon, 10% graphite, 10% PTFE

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TECAPEEK PVX is a semi-crystalline high performance thermoplastic with optimised tribological properties for demanding bearing and friction requirement.

- Main characteristics:
- Very good sliding properties even without lubrication
  - High thermal mechanical bearing strength
  - Good chemical resistance
  - Hydrolysis resistant, even against superheated steam
  - High wear resistance
  - Very rigid
  - High creep resistance
  - Not electrically insulating
  - Good machinability
  - Resistant to gamma radiation
  - Flame retardant UL94 V-0

Preferred fields: Mechanical and automotive engineering, nuclear and vacuum technology, transport and conveyor technology, textile, packaging and paper processing machinery, precision and chemical engineering, aircraft and aerospace industry, plant construction.

- Applications:
- Friction bearings
  - Static / dynamic high bearing strength parts
  - Slide shoes
  - Chain bearings
  - Sealing rings
  - Wear strips
  - Gears
  - Thrust washers
  - Ball valve seats
  - Slide rings
  - Piston rings

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Ensinger Ltd  
Wilfried Way  
Tonyrefail  
Mid Glam CF39 8JQ

Tel: 01443 678400  
Fax: 01443 675777  
Web: [www.ensinger.ltd.uk](http://www.ensinger.ltd.uk)  
Email: [sales@ensinger.ltd.uk](mailto:sales@ensinger.ltd.uk)

# TECAPEEK PVX

The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	
<b>Mechanical</b>			
Density	g/cm <sup>3</sup>	527 / D 792	1.48
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	130
Elongation at break	%	527 / D 638	1.5
Modulus of elasticity in tension	MPa	527 / D 638	9500
Modulus of elasticity in flexure	MPa	178 / D 790	8100
Ball indentation hardness	MPa	2039 / 1	208
Impact strength	kJ/m <sup>2</sup>	179 / D 256	30
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel p = 0,05 N/mm <sup>2</sup> , v = 0,6 m/s	–		0.11
Wear conditions as above	µm/km		
<b>Thermal</b>			
Crystalline melting point	°C	DIN 53 736	343
Glass transition temperature	°C	DIN 53 736	143
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	277

Properties	Unit	Test method DIN EN ISO / ASTM	
<b>Thermal</b>			
Max. service temperature short term long term	°C °C		300 260
Coefficient of thermal conductivity	W/(m · K)		0.24
Specific heat	J/(g · K)		
Coefficient of thermal expansion	10 <sup>-5</sup> /K	DIN 53 483 / D 696	2.2
<b>Electrical</b>			
Dielectric constant at 10 <sup>5</sup> Hz		DIN 53 483	
Dielectric loss factor at 10 <sup>5</sup> Hz		DIN 53 483	
Specific volume resistance	Ω · cm	DIN 60093	3 x 10 <sup>5</sup>
Surface resistance	Ω	DIN 60093	5 x 10 <sup>6</sup>
Dielectric strength 1 mm	kV/mm	ASTM 149	
Tracking resistance		53 480	
<b>Miscellaneous</b>			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.1
Water absorption at saturation at 23 °C	%	62	0.1
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			VO
Resistance to weathering			resistant

## ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg glass, carbon and aramid fibre, talc, MoS<sub>2</sub>, graphite, PTFE, PE, silicone oil, internal lubrication