

## TECAPEEK HT

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Chemical Designation: Polyetherketone

DIN Abbreviation: PEK

Colour, Filler: Black

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TECAPEEK HT is a semi-crystalline, high performance thermoplastic for very demanding applications offering extended high temperature performance

Main characteristics:

- High thermal mechanical bearing strength
- Excellent sliding properties
- Electrically insulating
- Creep resistant
- Good radiation resistance
- Inherent low flammability (UL94 V-0)
- Wear resistant
- Resistant to cleaning agents and numerous solvents and detergents

Preferred fields: Mechanical and automotive engineering, nuclear and vacuum technology, textile, packaging and paper processing machinery, electronic and electrical engineering, food processing and medical technology, chemical industry, aircraft and aerospace industries,

Applications:

- Gears
- Wear strips
- Bushes
- Metering pumps
- Light mountings
- Friction bearings
- Ball valve seals
- Pump housings
- Wafer supports
- Plug parts

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# TECAPEEK HT

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	1.32
Tensile strength at yield	MPa	527 / D 638	110
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	20
Modulus of elasticity in tension	MPa	527 / D 638	3800
Modulus of elasticity in flexure	MPa	178 / D 790	4100
Hardness Rockwell	MPa	2039 / 1	R108
Impact strength (Charpy)	kJ/m <sup>2</sup>	179 / D 256	52
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	–		
Wear conditions as above	µm/km		
<b>Thermal</b>			
Crystalline melting point	°C	DIN 53 736	374
Glass transition temperature	°C	DIN 53 736	157
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	165

Properties	Unit	Test method DIN EN ISO / ASTM	
<b>Thermal</b>			
Max. service temperature short term long term	°C °C		260
Coefficient of thermal conductivity	W/(m · K)		
Specific heat	J/(g · K)		
Coefficient of thermal expansion	10 <sup>-5</sup> /K	DIN 53 483 / D 696	5.7
<b>Electrical</b>			
Dielectric constant at 10 <sup>5</sup> Hz		DIN 53 483	3.3
Dielectric loss factor at 10 <sup>5</sup> Hz		DIN 53 483	0.0035
Specific volume resistance	Ω · cm	DIN 60093	10 <sup>16</sup>
Surface resistance	Ω	DIN 60093	
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	
Water absorption at saturation at 23 °C	%	62	
Resistance to hot water, washing soda			
Flammability according to UL standard 94			VO
Resistance to weathering			

## 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