



TECAPEEK ST
Improved mechanical properties
at higher temperatures



The ENSINGER portfolio of semi-finished products made of high performance plastics is joined by a new member of the polyaryletherketone family: TECAPEEK ST.

This innovative product is designed to perform in industries and applications requiring a combination of high temperature, mechanical performance and dimensional stability. Customer demands for high performance plastics in high temperature ranges are getting stronger. At the same time, machinability, purity and high chemical resistance are very important key properties.

TECAPEEK ST has been developed for demanding temperature environments such as the automotive, oil and gas or electronics industry. Parts and components made of TECAPEEK ST have the potential to perform better, last longer and help customers realize long-term cost savings where other unfilled polymers reach their limits.

Compared to other unfilled polymers (like TECAPEEK natural or TECAPEEK HT), TECAPEEK ST offers an improved mechanical performance, especially in the temperature range from 150 °C to 200 °C.

The glass transition temperature of TECAPEEK ST is at 162 °C (compared to TECAPEEK natural at 143 °C), the heat distortion temperature is increased from 152 °C (TECAPEEK natural) to 172 °C (TECAPEEK ST).

Preferred Fields

oil and gas industry, electronics, chemical industry, automotive

Applications

Turbocharger impellers, rings, gears, seals, sockets, ...

Properties

- | excellent mechanical performance at high temperatures
- | high heat distortion temperature
- | excellent chemical resistance
- | low moisture absorption
- | electrical insulation
- | easy to machine
- | good dimensional stability

Property values

Property values		TECAPEEK ST
Short description		PEKEKK
Long term service temperature	°C	>260 ⁽¹⁾
Density (ASTM D 792, DIN EN ISO 1183)	ρ g/cm ³	1,30
Tensile strength at yield (ASTM D 638, DIN EN ISO 527)	σ_s MPa	130 ⁽²⁾
Elongation at break (ASTM D 638, DIN EN ISO 527, ASTM D 1708 (a))	ϵ_R %	11 ⁽²⁾
Modulus of elasticity after tensile test (ASTM D 638, DIN EN ISO 527)	E_z MPa	4600 ⁽²⁾
Notched impact resistance (DIN EN ISO 179 1eA (Charpy))	a_n kJ/m ²	7,4 ⁽²⁾
Melting point (DIN 53 765)	T_m °C	387
Glass transition temperature (DIN 53 765)	T_g °C	162
Heat distortion temperature DIN EN ISO 75 method A	HDT/A °C	172
Resistance to hot water washing soda	-	+

(1) expected values

(2) testing of semi-finished products

The information corresponds with current knowledge and indicates our products and possible applications. We cannot give you a legally binding guarantee of the physical properties or the suitability for a specific application. Existing commercial patents are to be taken in account.

Please find information concerning the exclusion of liability and Terms and Conditions of Delivery in our Semi-finished products catalogue or at www.ensinger-online.com.

Dimensions:

Plates



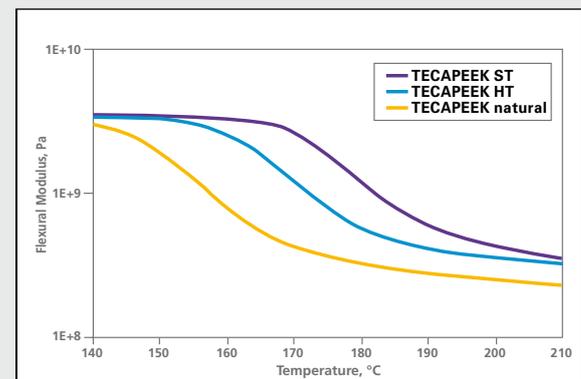
	Tolerance to DIN (mm)	TECAPEEK ST
DIN-Abbreviation		PEKEKK
Density (g/cm ³)		1,42
Diameter (mm)		kg/m
20 x 500	+ 0,3 + 1,5	14,27

Rods



	Tolerance to DIN (mm)	TECAPEEK ST
DIN-Abbreviation		PEKEKK
Density (g/cm ³)		1,42
Diameter Ø (mm)		kg/m
20	+ 0,2 + 1,1	0,444
40	+ 0,2 + 1,5	1,74

Stock lengths 3000 mm, other delivery lengths possible.



Comparison of flexural modulus (DMTA) over temperature of TECAPEEK ST, TECAPEEK HT and TECAPEEK natural.

