

# TECAPEEK ELS

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Chemical Designation: Polyetheretherketone

DIN Abbreviation: PEEK CF 30

Colour, Filler: Black carbon fibres

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TECAPEEK ELS is a carbon fibre filled semi-crystalline, high performance thermoplastic for demanding applications.

Main characteristics:

- High thermal and mechanical capacity
- Creep resistant
- Hydrolysis resistant,
- High dimensional stability
- Electrically conductive
- Good chemical resistance
- Electrically conductive
- Good radiation resistance

Preferred fields: Mechanical engineering, computer technology, nuclear and vacuum technology, transport and conveyor technology, textile, packaging and paper processing machinery, aircraft and aerospace industries

Applications:

- Semi conductor handling components
- Vacuum wands
- Wafer baskets
- Distance parts
- Gripper figures
- Gears in printer and copying machines
- Parts for ultra pure water systems
- Bearing bushes
- Levers
- Friction rings
- Ball bearing housings
- Bearing rings

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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	1.44
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	175
Elongation at break	%	527 / D 638	1
Modulus of elasticity in tension	MPa	527 / D 638	15500
Modulus of elasticity in flexure	MPa	178 / D 790	
Hardness	MPa	ASTM D 785	M105
Impact strength at 23°C (Charpy)	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	–		
Wear conditions as above	µm/km		
<b>Thermal</b>			
Crystalline melting point	°C	DIN 53 736	334
Glass transition temperature	°C	DIN 53 736	143
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	

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)		0.9
Specific heat	J/(g · K)		
Coefficient of thermal expansion	10 <sup>-6</sup> /K	DIN 53 483 / D 696	1.5
<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	10 <sup>2</sup> - 10 <sup>4</sup>
Surface resistance	Ω	DIN 60093	10 <sup>1</sup> - 10 <sup>3</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	0.2
Resistance to hot water, washing soda			
Flammability according to UL standard 94			V0
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