SUPPLY SERVICES

performance engineering products

TECAPEEK natural - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
beige opaque

Density
1.31 g/cm^3

Main features
- good heat deflection temperature
- good machinability
- inherent flame retardant
- resistance against high energy radiation
- good slide and wear properties
- very good chemical resistance
- high creep resistance
- hydrolysis and superheated steam resistant

Target Industries
- chemical technology
- mechanical engineering
- food technology
- electronics
- energy industry
- oil and gas industry
- aircraft and aerospace technology
- automotive industry
- semiconductor technology
- vacuum technology

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178		
Compression strength	1% / 2% 5mm/min, 10 N	23/43/102	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		253	MPa	ISO 2039-1	6)	

Thermal properties	*parameter*	*value*	*unit*	*norm*		*comment*
Glass transition temperature		150	°C	DIN 53765	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN 53765		
Heat distortion temperature	HDT, Method A	162	°C	ISO-R 75 Method A		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.27	W/(K*m)	ISO 22007-4:2008		

Electrical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω	DIN IEC 60093	1)	(1) Specimen in 20mm thickness (2) Specimen in 1mm thickness
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω*cm	DIN IEC 60093		
Dielectric strength	23°C, 50% r.h.	73	kV/mm	ISO 60243-1	2)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	125	V	DIN EN 60112		

Other properties	*parameter*	*value*	*unit*	*norm*		*comment*
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;		

→ TECAPEEK products are based on Victrex® PEEK polymer.

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TECAPEEK GF30 natural - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
beige opaque

Density
1.53 g/cm^3

Fillers
glass fibres

Main features
- inherent flame retardant
- improved toughness
- very high creep resistant
- good chemical resistance
- hydrolysis and superheated steam resistant
- very high stiffness
- high dimensional stability
- resistance against high energy radiation

Target Industries
- automotive industry
- chemical technology
- electronics
- oil and gas industry
- vacuum technology
- mechanical engineering
- aircraft and aerospace technology

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Modulus of elasticity (tensile test)	1mm/min	6300	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) Specimen 10x10x10mm (3) For Charpy test: support span 64mm, norm specimen. (4) Specimen in 4mm thickness
Tensile strength	5mm/min	113	MPa	DIN EN ISO 527-2		
Elongation at break	5mm/min	5	%	DIN EN ISO 527-2		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	29/52/120	MPa	EN ISO 604	2)	
Impact strength (Charpy)	max. 7,5J	52	kJ/m^2	DIN EN ISO 179-1eU	3)	
Ball indentation hardness		280	MPa	ISO 2039-1	4)	

Thermal properties	*parameter*	*value*	*unit*	*norm*		*comment*
Glass transition temperature		147	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.0	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.35	W/(K*m)	ISO 22007-4:2008		

Electrical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Specific surface resistance		10^{14}	Ω	DIN IEC 60093		(1) Specimen in 1mm thickness
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093		
Dielectric strength	23°C, 50% r.h.	36	kV/mm	ISO 60243-1	1)	

Other properties	*parameter*	*value*	*unit*	*norm*		*comment*
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK CF30 black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.38 g/cm^3

Fillers
carbon fibres

Main features
- good chemical resistance
- improved toughness
- inherent flame retardant
- hydrolysis and superheated steam resistant
- very high stiffness
- very high creep resistant
- high dimensional stability
- resistance against high energy radiation

Target Industries
- mechanical engineering
- oil and gas industry
- chemical technology
- automotive industry
- aircraft and aerospace technology
- vacuum technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	6000	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) Specimen 10x10x10mm (3) For Charpy test: support span 64mm, norm specimen. (4) Specimen in 4mm thickness
Tensile strength	50mm/min	112	MPa	DIN EN ISO 527-2		
Elongation at break	50mm/min	10	%	DIN EN ISO 527-2		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/47/111	MPa	EN ISO 604	2)	
Impact strength (Charpy)	max. 7,5J	92	kJ/m^2	DIN EN ISO 179-1eU	3)	
Ball indentation hardness		298	MPa	ISO 2039-1	4)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		147	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.2	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.66	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		10^3 - 10^9	Ω	DIN EN 61340-2-3	
Specific volume resistance		10^3 - 10^9	Ω*cm	DIN EN 61340-2-3	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK PVX black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.44 g/cm^3

Fillers
carbon fibres, PTFE, graphite

Main features
- good heat deflection temperature
- high creep resistance
- good slide and wear properties
- hydrolysis and superheated steam resistant
- good wear properties
- inherent flame retardant
- very good chemical resistance

Target Industries
- mechanical engineering
- chemical technology
- energy industry
- automotive industry
- aircraft and aerospace technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	5500	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	84	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	84	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	3	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	3	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	142	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	6000	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	22/43/102	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	4000	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	28	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		250	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		146	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN 53765		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	3	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	3	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.82	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance	Conductive rubber, 23°C, 12% r.h.	10^4 - 10^{11}	Ω	DIN EN 61340-2-3	1)	(1) Specimen in 20mm thickness
Specific volume resistance	Conductive rubber, 23°C, 12% r.h.	10^7 - 10^{12}	Ω*cm	DIN EN 61340-2-3		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK ID blue - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
blue grey opaque

Density
1.49 g/cm^3

Fillers
detectable filler

Main features
- detectable via metal detector
- good chemical resistance
- high creep resistance
- inherent flame retardant
- good heat deflection temperature
- hydrolysis and superheated steam resistant
- good machinability

Target Industries
- food technology
- mechanical engineering

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4600	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	111	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	111	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	6	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	166	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	3700	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/46/106	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	4800	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	72	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		260	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		150	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.27	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		10^{14}	Ω	DIN IEC 60093	
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

Ensinger

TECAPEEK CMF grey - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
grey opaque

Density
1.65 g/cm^3

Fillers
ceramic

Main features
- good machinability
- high strength
- high stiffness
- low thermal expansion
- low burring
- good heat deflection temperature
- very good thermal stability

Target Industries
- semiconductor technology
- electronics
- mechanical engineering
- vacuum technology

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Modulus of elasticity (tensile test)	1mm/min	5500	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	105	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	102	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	5	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	170	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	5500	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/46/105	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	4300	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	35	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		286	MPa	ISO 2039-1	6)	

Thermal properties	*parameter*	*value*	*unit*	*norm*		*comment*
Glass transition temperature		151	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		339	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.0	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.38	W/(K*m)	ISO 22007-4:2008		

Electrical properties	*parameter*	*value*	*unit*	*norm*	*comment*
Specific surface resistance		10^{14}	Ω	DIN IEC 60093	
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093	

Other properties	*parameter*	*value*	*unit*	*norm*		*comment*
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

Ensinger

TECAPEEK TS grey - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
blue grey opaque

Density
1.49 g/cm^3

Fillers
mineral filler

Main features
- high dimensional stability
- good chemical resistance
- low moisture absorption
- low burring
- good heat deflection temperature
- low coefficient of thermal expansion

Target Industries
- semiconductor technology
- electronics
- mechanical engineering
- vacuum technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	5700	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	110	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	110	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	5900	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	17/34/98	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	4300	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	7	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		290	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		151	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		339	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		10^{14}	Ω	DIN IEC 60093	
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

Ensinger

TECAPEEK ELS nano black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.36 g/cm^3

Fillers
CNT

Main features
- high dimensional stability
- continuous service temperature up to 260 °C
- high strength
- very good chemical resistance
- electrically conductive
- high thermal and mechanical capacity
- good machinability
- high toughness

Target Industries
- aircraft and aerospace technology
- electronics
- mechanical engineering
- semiconductor technology
- computer technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4800	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	106	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	106	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	178	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4700	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	27/47/106	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3600	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	58	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		253	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		147	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.46	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance	Conductive rubber, 23°C, 12% r.h.	10^2 - 10^4	Ω	DIN EN 61340-2-3	1)	(1) Specimen in 20mm thickness
Specific volume resistance	Conductive rubber, 23°C, 12% r.h.	10^3 - 10^5	Ω*cm	DIN EN 61340-2-3		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) (+) limited resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		(+)		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK TF10 blue - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
blue opaque

Density
1.38 g/cm^3

Fillers
PTFE

Main features
- good machinability
- good slide and wear properties
- inherent flame retardant
- good heat deflection temperature
- hydrolysis and superheated steam resistant

Target Industries
- mechanical engineering
- food technology
- automotive industry
- chemical technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	3400	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	95	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	95	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	8	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	149	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	3900	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	22/39/93	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3000	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	48	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		220	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		157	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		340	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		10^{14}	Ω	DIN IEC 60093	
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK HT black - Stock Shapes

Chemical Designation
PEK (Polyetherketone)

Colour
black opaque

Density
1.31 g/cm^3

Main features
- high thermal and mechanical capacity
- good wear resistance
- good chemical resistance
- inherent flame retardant
- very good slide and wear properties
- electrically insulating
- high creep resistance
- resistance against high energy radiation

Target Industries
- mechanical engineering
- conveyor technology
- automotive industry
- chemical plant engineering

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4600	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	120	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	120	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	5	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	192	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4600	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/45/100	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3500	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		282	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		160	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		375	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω	DIN IEC 60093	1)	(1) Specimen in 20mm thickness (2) Specimen in 1mm thickness
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω*cm	DIN IEC 60093		
Dielectric strength	23°C, 50% r.h.	62	kV/mm	ISO 60243-1	2)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	200	V	DIN EN 60112		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.04	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) (+)limited resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		(+)		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK ST black - Stock Shapes

Chemical Designation
PEKEKK (Polyetherketoneetherketoneketone)

Colour
black opaque

Density
1.32 g/cm^3

Main features
- high thermal and mechanical capacity
- very good chemical resistance
- good machinability
- good heat deflection temperature
- high dimensional stability
- low moisture absorption

Target Industries
- chemical technology
- mechanical engineering
- automotive industry

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Modulus of elasticity (tensile test)	1mm/min	4600	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	134	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	134	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	13	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	193	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4600	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	24/42/98	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3500	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		275	MPa	ISO 2039-1	6)	

Thermal properties	*parameter*	*value*	*unit*	*norm*		*comment*
Glass transition temperature		165	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		384	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	*parameter*	*value*	*unit*	*norm*	*comment*
Specific surface resistance		10^{14}	Ω	DIN IEC 60093	

Other properties	*parameter*	*value*	*unit*	*norm*		*comment*
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) (+) limited resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		(+)		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK MT black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.31 g/cm^3

Main features
- very good stress cracking resistance
- hydrolysis and superheated steam resistant
- good machinability
- very good chemical resistance
- high creep resistance
- resistance against high energy radiation
- very good sterilisable

Target Industries
- medical technology
- food technology
- mechanical engineering

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	114	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	114	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	13	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	171	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4100	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	23/44/105	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	5	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		243	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		151	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.3	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance		10^{14}	Ω	DIN IEC 60093		(1) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093	1)	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK MT CLASSIX white - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
cream white opaque

Density
1.4 g/cm^3

Main features
- → very good chemical resistance
- → high dimensional stability
- → biocompatible
- → good slide and wear properties
- → hydrolysis and superheated steam resistant
- → resistance against high energy radiation
- → high strength

Target Industries
- → medical technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4700	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	117	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	117	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	11	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	177	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4400	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/45/105	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3500	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	5	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		263	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		150	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.0	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.30	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance		10^{14}	Ω	DIN IEC 60093		
Specific volume resistance		10^{14}	Ω*cm	DIN IEC 60093		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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TECAPEEK SE natural - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
beige opaque

Density
1.31 g/cm^3

The values in this data sheet are tested on a dimension outside of the standard reference dimension (rod Ø 40-60 mm).

Main features
- good heat deflection temperature
- good machinability
- inherent flame retardant
- resistance against high energy radiation
- good slide and wear properties
- very good chemical resistance
- high creep resistance
- hydrolysis and superheated steam resistant

Target Industries
- semiconductor technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (6) Specimen in 4mm thickness
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178		
Compression strength	1% / 2% 5mm/min, 10 N	23 / 43	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		253	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		150	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Heat distortion temperature	HDT, Method A	162	°C	ISO-R 75 Method A		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.27	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω	DIN IEC 60093	1)	(1) Specimen in 20mm thickness (2) Specimen in 1mm thickness
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω*cm	DIN IEC 60093		
Dielectric strength	23°C, 50% r.h.	73	kV/mm	ISO 60243-1	2)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	125	V	DIN EN 60112		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;		

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TECAPEEK SD black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.71 g/cm^3

Main features
- electrically static dissipative
- excellent chemical resistance

Target Industries
- semiconductor technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	5800	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) For Charpy test: support span 64mm, norm specimen. (5) Specimen in 4mm thickness
Tensile strength	50mm/min	91	MPa	DIN EN ISO 527-2		
Elongation at break	50mm/min	2	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	148	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	5600	MPa	DIN EN ISO 178		
Compression strength	1% / 2% 5mm/min, 10 N	28 / 53	MPa	EN ISO 604	3)	
Impact strength (Charpy)	max. 7,5J	43	kJ/m^2	DIN EN ISO 179-1eU	4)	
Ball indentation hardness		280	MPa	ISO 2039-1	5)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		151	°C	DIN EN ISO 11357	1)	(1) Found in public sources.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C	DIN 53765		
Service temperature	long term	260	°C	DIN 53765		
Thermal expansion (CLTE)	23-60°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	5	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance		10^6 - 10^9	Ω	DIN EN 61340-2-3		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm

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TECAPEEK ELS CF30 black - Stock Shapes

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.38 g/cm^3

Fillers
carbon fibres

Main features
- good heat deflection temperature
- good chemical resistance
- inherent flame retardant
- hydrolysis and superheated steam resistant
- very high stiffness
- very high creep resistant
- high dimensional stability
- resistance against high energy radiation

Target Industries
- conveyor technology
- semiconductor technology
- mechanical engineering
- aircraft and aerospace technology
- chemical technology
- textile industry
- automotive industry
- vacuum technology

Mechanical properties	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	6800	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Tensile strength	50mm/min	122	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	122	MPa	DIN EN ISO 527-2		
Elongation at yield	50mm/min	7	%	DIN EN ISO 527-2		
Elongation at break	50mm/min	7	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	193	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	6800	MPa	DIN EN ISO 178		
Compression strength	1% / 2% 5mm/min, 10 N	25 / 47	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	5000	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	62	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		355	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		147	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Service temperature	short term	300	°C		2)	
Service temperature	long term	260	°C			
Thermal expansion (CLTE)	23-60°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	4	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.2	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.66	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
Specific surface resistance		10^2 - 10^4	Ω	DIN EN 61340-2-3		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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