TECAPEEK UD blue - Stock Shapes (rods, plates, tubes)

Chemical Designation
PEEK (Polyetheretherketone)

Colour
blue grey opaque

Density
1.71 g/cm^3

Fillers
detectable filler

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

Target Industries
- food engineering
- food processing
- engineering for beverage filling systems
- conveyor technology
- pharmaceutical industry
- mechanical engineering

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	94	MPa	DIN EN ISO 527-2		(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
Modulus of elasticity (tensile test)	1mm/min	5300	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	94	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	155	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	5000	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/46/113	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	1800	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	27	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		257	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		151	°C	DIN EN ISO 11357		(1) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		340	°C	DIN EN ISO 11357		
Service temperature	long term	260	°C	-		
Service temperature	short term	300	°C	-	1)	
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		

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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