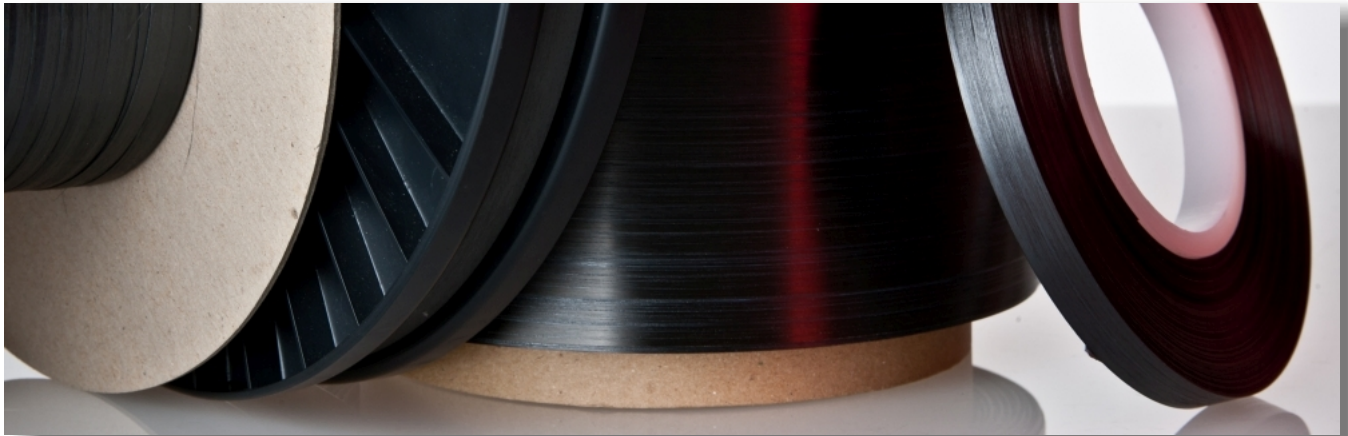


Tenax®-E TPUD PEEK-HTS45 is a thermoplastic unidirectional prepreg (TPUD) which combines two high-performance materials. The polymer matrix of PEEK (polyetheretherketon) offers excellent resistance to chemicals and solvents, whilst the utilisation of Tenax®-E HTS45, a high tenacity carbon fiber manufactured with a tailored sizing for thermoplastics applications, results in a combination of materials offering an outstanding composite material performance.



Product benefits

- high-performance mechanical properties
- continuous use at elevated temperature
- low flammability, smoke and toxicity
- resistant to chemicals and solvents
- room temperature storage and shipping
- compliant to Health, Safety and Environment requirement
- biocompatible (comply with ISO 10993-5)
- recyclable

Process benefits

- out of autoclave consolidation (press forming, vacuum bagging, tape winding)
- short cycle time
- thermoformable
- automated process (AFP, ATL) thermoplastic joining technologies

Brand name	Tenax®	
Production site	E (Europe)	
Product designation	Tenax®-E TPUD PEEK-2-34-HTS45 P12 12K-UD-145	
Fiber	Tenax®-E HTS45 P12 12K 800tex	Density: 1.80 g/cm ³
Matrix	PEEK (Polyetheretherketon)	Density: 1.30 g/cm ³

Semi-finished product

Prepreg areal weight	220 g/m ²
Fiber areal weight	145 g/m ²
Matrix content	34 wt%
Nominal thickness	0.14 mm .0055"
Width	6.35 mm to 304.8 mm 1/4" to 12"

Thermoforming recommendations

Consolidation temp.	390 ± 10 °C 734 ± 18 °F
Consolidation pressure	20 ± 10 bar 290 ± 145 psi
Consolidation time	20 ± 10 min

Properties (test direction)		Test temperature / Conditioning		Typical value	
Glass transition temperature	onset	23 °C / 50 % r.h.		138 °C	282 °F
Tensile strength (0°) EN 2661 B	modulus	23 °C / 50 % r.h.		138 GPa	20 Msi
	strength	23 °C / 50 % r.h.		2300 MPa	333 ksi
Compression (0°) EN 2850 B1/B2	modulus	23 °C / 50 % r.h.		120 GPa	17,5 Msi
	strength	23 °C / 50 % r.h.		1280 MPa	185 ksi
Flexure (0°) EN 2562 A	modulus	23 °C / 50 % r.h.		120 GPa	17,5 Msi
	strength	23 °C / 50 % r.h.		1840 MPa	267 ksi
Flexure (90°) EN 2562 A	modulus	23 °C / 50 % r.h.		9,2 GPa	1,3 Msi
	strength	23 °C / 50 % r.h.		162 MPa	12,5 ksi

- All data are typical values representative of the material. Properties may vary depending on samples preparation and test methods.
- For each shipment an inspection certificate 3.1 according to DIN EN 10204 is generated and supplied.
- A detailed customer specification is arranged on request.
- The export or transfer of carbon fiber products can be subject to authorization, depending on end-use and final destination