

TECATEC PEEK MT CW50 black - Composite Materials

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.52 g/cm³

Fillers

carbon fibres

production process: compression moulding

Main features

- biocompatible
- excellent chemical resistance
- low coefficient of thermal expansion
- continuous service temperature up to 260 °C
- very high stiffness
- very high strength

Target Industries

- medical technology

General material information	parameter	value	unit	norm	comment
Fibre type		carbon HT 3k		-	
Fibre architecture		atlas 5HS		-	
Fibre orientation		0-90°		-	
Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	0.25 mm/min	713	MPa	ISO 527-4	1) (1) test specimen 250x25x2 mm, cap strips 50 mm
Modulus of elasticity (tensile test)		59000	MPa	ISO 527-4	(2) test specimen 100x15x2 mm, support span 80 mm
Flexural strength	10 mm/min	866	MPa	ISO 14125	2) (3) test specimen 110x10x4 mm, cap strips 50 mm
Modulus of elasticity (flexural test)		55000	MPa	ISO 14125	(4) test specimens 80x10x4 mm, support span 64 mm
Compression strength	1 mm/min	645	MPa	ISO 14126	3) (5) test specimen 250x25x2 mm, cap strips 50 mm
Impact strength (Charpy)	unnotched	65.5	kJ/m ²	DIN EN ISO 179-1eA	4) (6) test specimen 20x10x2 mm
Interplanar shear strength	10 mm/min	137	MPa	ISO 14125	5)
Interlaminar shear strength	5 mm/min	65	MPa	ISO 14130	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		143	°C	-	1) (1) found in public sources
Melting temperature		343	°C	DIN EN ISO 11357	
Service temperature	short term	300	°C	-	
Service temperature	long term	260	°C	-	
Thermal expansion (CLTE)	in 0° and 90° direction 0 - 300°C	5	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1:2	
Other properties	parameter	value	unit	norm	comment
Water absorption	48h, 80°C	0.15	%	DIN EN ISO 62	(1) + good resistance
Resistance to hot water/ bases		+		-	2) - poor resistance
Resistance to weathering		-		-	3) 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.
Flammability (UL94)	corresponding to	V0		-	3)
Predrying	parameter	value	unit	norm	comment
Drying temperature		150	°C	-	
Drying time		3	h	-	

Nothing contained in this Technical Datasheet shall be interpreted as any express warranty or guarantee. We are neither liable for any values nor content of this datasheet. This exclusion of liability does not apply to claims for damages based on intent, gross negligence or culpable breach of material contractual obligations (cardinal obligations), nor in the case of injury to life, body or health and in the case of product liability as provided by law. Nothing contained herein shall be construed to indicate the non-existence of any relevant patents or to constitute a permission, encouragement or recommendation to practice any development covered by any patents, without permission of the owner of this patent. Data sheet parameters are subject to regular review, the current versions can be found at www.ensingerplastics.com