TECATEC PEEK MT CW50 black - Composite Materials

Chemical Designation
PEEK (Polyetheretherketone)

Colour
beige black

Density
1.52 g/cm^3

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 (2) test specimen 100x15x2 mm, support span 80 mm (3) test specimen 110x10x4 mm, cap strips 50 mm (4) test specimens 80x10x4 mm, support span 64 mm (5) test specimen 250x25x2 mm, cap strips 50 mm (6) test specimen 20x10x2 mm
Modulus of elasticity (tensile test)		59000	MPa	ISO 527-4		
Flexural strength	10 mm/min	866	MPa	ISO 14125	2)	
Modulus of elasticity (flexural test)		55000	MPa	ISO 14125		
Compression strength	1 mm/min	645	MPa	ISO 14126	3)	
Impact strength (Charpy)	unnotched	65.5	kJ/m^2	DIN EN ISO 179-1eA	4)	
in-plane shear strength	10 mm/min	137	MPa	ISO 14129	5)	
Interlaminar shear strength	5 mm/min	65	MPa	ISO 14130	6)	

Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		143	°C	-	
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 (2) - poor resistance (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.
Resistance to hot water/ bases		+		-	1)	
Resistance to weathering		-		-	2)	
Flammability (UL94)	corresponding to	V0		-	3)	

Predrying	parameter	value	unit	norm	comment
Drying temperature		150	°C	-	
Drying time		3	h	-	

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