TECANAT CMP natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PC (Polycarbonate)

Colour
transparent transparent

Density
1.19 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
- high toughness
- electrically insulating
- good machinability
- easy to polish
- good heat deflection temperature
- sensitive to stress cracking
- good weldable and bondable

Target Industries
- semiconductor technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	69	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. n.b. = not broken (6) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1mm/min	2200	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	69	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	6	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	90	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	97	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	2300	MPa	DIN EN ISO 178		
Compression strength	1% / 2% 5mm/min, 10 N	16 / 29	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	2000	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	14	kJ/m^2	DIN EN ISO 179-1eA		
Ball indentation hardness		128	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		149	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) n.a. = not applicable (3) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		n.a.	°C	DIN EN ISO 11357	2)	
Service temperature	short term	140	°C		3)	
Service temperature	long term	120	°C			
Thermal expansion (CLTE)	23-60°C, long.	8	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	8	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.3	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.25	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity		10^{14}	Ω	-		
volume resistivity		10^{14}	Ω*cm	-		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.03 / 0.06	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) - poor 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	HB		DIN IEC 60695-11-10;	4)	

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