

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

Chemical Designation

PC (Polycarbonate)

Colour

transparent transparent

Density

1.19 g/cm³

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

- mechanical engineering
- electronics
- food technology
- automotive industry

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50mm/min	69	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	2200	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	69	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	6	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	90	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	97	MPa	DIN EN ISO 178	2) n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	2300	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	16/29/64	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	
Shore hardness	D	82		DIN EN ISO 868	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		149	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		n.a.	°C	DIN EN ISO 11357	2) (2) n.a. = not applicable
Service temperature	short term	140	°C		3) (3) Found in public sources. Individual testing regarding application conditions is mandatory.
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	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
surface resistivity		10 ¹⁴	Ω	-	
volume resistivity		10 ¹⁴	Ω*cm	-	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	24h / 96h (23°C)	0.03 / 0.06	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		-	-	-	2) (2) - poor resistance
Resistance to weathering		(+)	-	-	3) (3) (+) limited resistance
Flammability (UL94)	listed (value at 0.4 and 1.5 mm)	HB		DIN IEC 60695-11-10;	

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