

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

Chemical Designation

PC (Polycarbonate)

Colour

transparent transparent

Density

1.19 g/cm³

Main features

- excellent impact strength
- excellent strength and stiffness
- excellent dimensional stability
- good machinability

Target Industries

- aircraft and aerospace technology
- food engineering
- food processing
- cleanroom technology
- packaging and paper machinery

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	340,000	psi	ASTM D 638	(1) Injection molded data (2) Injection molded data (3) Injection molded data (4) per ASTM D732
Tensile strength at yield	@ 73 °F	9,300	psi	ASTM D 638	
Elongation at break (tensile test)	@ 73 °F	90	%	ASTM D 638	
Flexural strength	@ 73 °F	12,000	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	340,000	psi	ASTM D 790	
Compression strength	@1% strain, 73 °F	2,100	psi	ASTM D 695	
Compression strength	@10% strain, 73 °F	10,000	psi	ASTM D 695	
Compression modulus	@ 73 °F	245,000	psi	ASTM D 695	
Impact strength (Izod)	@ 73 °F	2.5	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F M Scale (R Scale)	70 (118)		ASTM D 785	1)
Shore hardness	D scale	79		ASTM D 785	
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.38		ASTM D 3702	2)
Wear (K) factor	Against Steel, 40 psi, 50 fpm	2,500*10 ⁻¹⁰	in ³ -min/ft-lbs-hr	ASTM D 3702	3)
Shear strength		9,900	psi	-	4)
Thermal properties	condition	value	unit	test method	comment
Vicat softening point		309	°F	ASTM D 1525	1)
Deflection temperature	@ 66 psi	280	°F	ASTM D 648	2)
Deflection temperature	@264 psi	270	°F	ASTM D 648	3)
Service temperature	Intermittent	275	°F	-	(1) Injection molded data (2) Injection molded data (3) Injection molded data (4) per UL746B (5) Injection molded data (6) per ASTM C351 Injection molded data (7) Injection molded data
Service temperature	Long Term	250	°F	-	4)
Thermal expansion (CLTE)		3.8	*10 ⁻⁵ in/in/°F	ASTM D 696	5)
Specific heat		0.30	BTU/lb-F°	-	6)
Thermal conductivity		1.39	BTU-in/hr-ft ² -°F	ASTM C 177	7)
Electrical properties	condition	value	unit	test method	comment
volume resistance		1.0*10 ¹⁷	Ω*cm	ASTM D 257	1)
Dielectric strength		378	V/mil	ASTM D 149	2)
Dissipation factor	@ 60 Hz, 73 °F	0.0009		ASTM D 150	3)
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	3.17		ASTM D 150	4)
Dielectric constant	@ 1MHz	2.96		ASTM D 150	5)
Other properties	condition	value	unit	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.13	%	ASTM D 570	1)
Moisture absorption	@ saturation, 73 °F	0.35	%	ASTM D 570	2)
Flammability (UL94)		HB		-	3)

→ Resin specification:
ASTM D3935-09 PC0150B34840
Shapes specification:
ASTM D6098-10 S-PC0111

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