

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	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	2500*10 ⁻³	ASTM D 3702	3)
Shear strength		9,900 psi	-	4)
Thermal properties	condition	value	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	-	4)
Service temperature	Long Term	250 °F	-	5)
Thermal expansion (CLTE)		3.8 *10 ⁻⁵ in/in/°F	ASTM D 696	6)
Specific heat		0.30 BTU/lb-°F	-	7)
Thermal conductivity		1.39 BTU-in/hr-ft ² -°F	ASTM C 177	
Electrical properties	condition	value	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	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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