

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	328,000	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	
Impact strength (Izod)	unnotched	65	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 ⁻⁷	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	295	°F	ASTM D 648	3) per UL746B 4) Injection molded data 5) per ASTM C351 Injection molded data 6) Injection molded data
Service temperature	Intermittent	275	°F	-	
Service temperature	Long Term	250	°F	-	3)
Thermal expansion (CLTE)		3.8	*10 ⁻⁵ in/in/°F	ASTM D 696	4)
Specific heat		0.30	BTU/lb-F°	-	5)
Thermal conductivity		1.39	BTU-in/hr-ft ² -°F	ASTM C 177	6)
Electrical properties	condition	value	unit	test method	comment
volume resistance	@ 500V	1.0*10 ¹⁵	Ω*cm	ASTM D 257	1)
Dielectric strength		365	V/mil	ASTM D 149	2) Injection molded data 3) Injection molded data
Dissipation factor	@ 60 Hz, 73 °F	0.0009		ASTM D 150	2)
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	2.87		ASTM D 150	
Dielectric constant	@ 1MHz	2.96		ASTM D 150	3)
Other properties	condition	value	unit	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.07	%	ASTM D 570	1)
Moisture absorption	@ saturation, 73 °F	0.35	%	ASTM D 570	2)
Flammability (UL94)		HB		-	3) Injection molded data 4) ASTM D635
Flammability		Self extinguishing		-	4)

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

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