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

Chemical Designation
PC (Polycarbonate)

Colour
transparent transparent

Density
1.19 g/cm^3

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	parameter	value	unit	norm		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^{-10}	in³-min/ft-lbs-hr	ASTM D 3702	3)	
Shear strength		9,900	psi	-	4)	

Thermal properties	parameter	value	unit	norm		comment
Vicat softening point		309	°F	ASTM D 1525	1)	(1) Injection molded data (2) Injection molded data (3) per UL746B (4) Injection molded data (5) per ASTM C351 Injection molded data (6) Injection molded data
Deflection temperature	@ 66 psi	280	°F	ASTM D 648	2)	
Deflection temperature	@264 psi	295	°F	ASTM D 648		
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	parameter	value	unit	norm		comment
volume resistance	@ 500V	1.0*10^{15}	Ω*cm	ASTM D 257	1)	(1) Injection molded data (2) Injection molded data (3) Injection molded data
Dielectric strength		365	V/mil	ASTM D 149		
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	parameter	value	unit	norm		comment
Moisture absorption	@ 24 hrs, 73 °F	0.07	%	ASTM D 570	1)	(1) Injection molded data (2) Injection molded data (3) @ 1.47mm thickness Injection molded data (4) ASTM D635
Moisture absorption	@ saturation, 73 °F	0.35	%	ASTM D 570	2)	
Flammability (UL94)		HB		-	3)	
Flammability		Self extinguishing		-	4)	

- Resin specification:
  ASTM D3935-21 PC0150B34840
  Shapes specification:
  ASTM D6098-16 S-PC0111

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