

TECANAT® GF20 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PC (Polycarbonate)

Colour

blue grey opaque

Density

1.33 g/cm³

Fillers

glass fibres

Main features

- high toughness
- good thermal stability
- very high stiffness
- good tensile strength

Target Industries

- aircraft and aerospace technology
- automotive industry
- fixture construction
- electrical engineering
- mechanical engineering

Mechanical properties	condition	value	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	700,000	psi	ASTM D 638
Tensile strength at yield	@ 73 °F	11,000	psi	ASTM D 638
Elongation at break (tensile test)	@ 73 °F	3	%	ASTM D 638
Flexural strength	@ 73 °F	16,700	psi	ASTM D 790
Modulus of elasticity (flexural test)	@ 73 °F	600,000	psi	ASTM D 790
Compression strength	@ 73 °F, 1% strain	2,000	psi	ASTM D 695
Compression strength	@ 73 °F, 10% strain	15,000	psi	ASTM D 695
Compression modulus	@ 73 °F	319,000	psi	ASTM D 695
Impact strength (Izod)	@ 73 °F	2.06	ft-lbs/in	- 1)
Rockwell hardness	@ 73 °F M Scale	87		ASTM D 785 2)
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.22		ASTM D 3702 3)
Wear (K) factor	Against Steel, 40 psi, 50 fpm	120*10 ⁻¹⁰	in ³ -min/ft-lbs-hr	ASTM D 3702 4)

Thermal properties	condition	value	test method	comment
Vicat softening point		329	°F	ASTM D 1525 1)
Deflection temperature	@ 264 psi	295	°F	ASTM D 648 2)
Deflection temperature	@ 66 psi	298	°F	ASTM D 648 3) (4) per UL746B (5) Injection molded data
Service temperature	Intermittent	275	°F	-
Service temperature	Long Term	266	°F	- 4)
Thermal expansion (CLTE)	-40 F to 203 F	1.5	*10 ⁻⁵ in/in/°F	ASTM E 831 5)

Electrical properties	condition	value	test method	comment
volume resistance		1.0*10 ¹⁷	Ω*cm	ASTM D 257 1)
Dielectric strength		490	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	1 MHz	3.13	%	ASTM D 150 5)

Other properties	condition	value	test method	comment
Moisture absorption	@ saturation, 73 °F	0.29	%	ASTM D 570 1)
Moisture absorption	@ 24 hrs, 73 °F	0.07	%	ASTM D 570 2)
Flammability (UL94)		V0	-	- 3) (1) Injection molded data (2) Injection molded data (3) @ 3.0mm thickness Injection molded data

→ Resin specification:

ASTM D 3935-09 PC0120G20A33230

Shapes specification:

ASTM D6098-10 S-PC0100G2010000000

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