TECASON P MT bone (Radel® 5500) - Stock Shapes (rods, plates, tubes)

Chemical Designation
PPSU (Polyphenylsulfone)

Colour
bone

Density
1.29 g/cm^3

Main features
- resistant to autoclaving
- biocompatible
- compliant with cytoxicity according to ISO 10993-5
- meets requirements for USP Class VI
- excellent impact strength

Target Industries
- medical technology
- pharmaceutical industry

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	350,000	psi	ASTM D 638	
Tensile strength at yield	@ 73 °F	11,000	psi	ASTM D 638	
Elongation at break (tensile test)	@ 73 °F	80	%	ASTM D 638	
Flexural strength	@ 73 °F	15,500	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	325,000	psi	ASTM D 790	
Compression strength	10% Strain @ 73 °F	13,500	psi	ASTM D 695	
Compression strength	@ 1% strain	1,500	psi	ASTM D 695	
Compression modulus		225,000	psi	ASTM D 695	
Impact strength (Izod)	@ 73 °F	2.5	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F M Scale	85		ASTM D 785	

Thermal properties	condition	value	unit	test method		comment
Vicat softening point		424	°F	-	1)	(1) Injection molded data (2) Injection molded data (3) Injection molded data (4) Data obtained from public source (5) Injection molded data (6) Injection molded data
Deflection temperature	@264 psi	405	°F	ASTM D 648	2)	
Deflection temperature	@ 66 psi	417	°F	ASTM D 648	3)	
Service temperature	Intermittent	360	°F	-		
Service temperature	Long Term	300	°F	-	4)	
Thermal expansion (CLTE)		$3.1*10^{-5}$	in/in/°F	ASTM D 696	5)	
Specific heat		0.27	BTU/lb-F°	-	6)	

Electrical properties	condition	value	unit	test method		comment
volume resistance		$1.0*10^{15}$	Ω*cm	ASTM D 257	1)	(1) Injection molded data (2) Injection molded data (3) Injection molded data
Dielectric strength		360	V/mil	ASTM D 149	2)	
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	3.44		ASTM D 150	3)	

Other properties	condition	value	unit	test method		comment
Moisture absorption	@ 24 hrs, 73 °F	0.37	%	ASTM D 570		(1) estimated
Moisture absorption	@ saturation, 73 °F	1.1	%	ASTM D 570		
Flammability (UL94)		V0		-	1)	

- Resin specification:
  ASTM D 6394-21 SP0311
  Shapes specification:
  none

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