TECARAN ABS - Stock Shapes

Chemical Designation
ABS (Acrylnitrile-butadiene-styrene copolymer)

Colour
beige opaque

Density
1.02 g/cm^3

Main features
- electrically insulating
- high stiffness
- good chemical resistance
- low density
- good damping
- high toughness
- low moisture absorption

Target Industries
- home appliances
- automotive industry
- fixture construction
- food engineering
- electronics
- medical technology

Mechanical properties	condition	value		test method		comment
Modulus of elasticity (tensile test)	@ 73 °F	350,000	psi	ASTM D 638		(1) Data obtained from public source (2) Injection molded data (3) Injection molded data (4) Injection molded data
Tensile strength at yield	@ 73 °F	5,700	psi	ASTM D 638		
Tensile strength at break	@ 73 °F	5,100	psi	ASTM D 638	1)	
Elongation at yield	@ 73 °F	2.5	%	ASTM D 638		
Elongation at break	@ 73 °F	20	%	ASTM D 638		
Flexural strength	@ 73 °F	8,300	psi	ASTM D 790		
Modulus of elasticity (flexural test)	@ 73 °F	265,000	psi	ASTM D 790		
Compression strength	@ 73 °F, 10% strain	6,000	psi	ASTM D 695		
Compression strength	@ 73 °F, 1% strain	1.080	psi	ASTM D 695		
Compression modulus	@ 73 °F	176,000	psi	ASTM D 695		
Impact strength (Izod)	@ 73 °F	6.6	ft-lbs/in	ASTM D 256		
Rockwell hardness	@ 73 °F R Scale	101		ASTM D 785		
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.35		ASTM D 3702	2)	
Coefficient of friction	Static	0.19 - 0.21		ASTM D 3702	3)	
Wear (K) factor	Against Steel, 40 psi, 50 fpm	3500*10^{-10}	in³-min/ft-lbs-hr	ASTM D 3702	4)	

Thermal properties	condition	value		test method		comment
Vicat softening point		224	°F	-	1)	(1) Injection molded data (2) Injection molded data (3) Injection molded data (4) per UL746B (5) Injection molded data
Deflection temperature	@264 psi	177	°F	ASTM D 648	2)	
Deflection temperature	@ 66 psi	200	°F	ASTM D 648	3)	
Service temperature	Intermittent	210	°F	-		
Service temperature	Long Term	160	°F	-	4)	
Thermal expansion (CLTE)	-40F to 100F	5.6*10^{-5}	in/in/°F	ASTM D 696	5)	

Electrical properties	condition	value		test method		comment
Specific surface resistance		1.0*10^{14}	Ω/square	ASTM D 257	1)	(1) Data obtained from public source (2) Injection molded data (3) Injection molded data (4) Injection molded data (5) Injection molded data
Volume resistivity		1*10^{15}	Ω*cm	ASTM D 257	2)	
Dielectric strength		450	V/mil	ASTM D 149	3)	
Dissipation factor	@ 60 Hz, 73 °F	0.02		ASTM D 150	4)	
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	3.3		ASTM D 150	5)	

Other properties	condition	value		test method		comment
Moisture absorption	@ saturation, 73 °F	0.70	%	ASTM D 570		(1) Injection molded data (1.5mm thick)
Moisture absorption	@ 24 hrs, 73 °F	0.13	%	ASTM D 570		
Flammability (UL94)		HB		-	1)	

- Resin specification:
  ASTM D4673 ABS0220B43630
  Shapes specification:
  NONE

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