

## TECARAN ABS black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

ABS (Acrylonitrile-butadiene-styrene copolymer)

### Colour

black opaque

### Density

1.03 g/cm<sup>3</sup>

### Main features

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

### Target Industries

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

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	350,000	psi	ASTM D 638	(1) Data obtained from public source
Tensile strength at yield	@ 73 °F	5,500	psi	ASTM D 638	(2) Injection molded data
Tensile strength at break	@ 73 °F	4,280	psi	ASTM D 638	(3) Injection molded data
Elongation at yield (tensile test)	@ 73 °F	1.7	%	ASTM D 638	(4) Injection molded data
Elongation at break (tensile test)	@ 73 °F	25	%	ASTM D 638	
Flexural strength	@ 73 °F	8,300	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	275,000	psi	ASTM D 790	
Compression strength	@ 73 °F, 1% strain	3,000	psi	ASTM D 695	
Compression strength	@ 73 °F, 10% strain	6,900	psi	ASTM D 695	
Compression modulus	@ 73 °F	170,000	psi	ASTM D 695	1)
Impact strength (Izod)	@ 73 °F	5.3	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F R Scale	102		ASTM D 785	
Rockwell hardness	@ 73 °F M scale	111		ASTM D 785	
Shore hardness	@ 73 °F D scale	78		ASTM D 2240	
Coefficient of friction	Static	0.19 - 0.21		ASTM D 3702	2)
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.35		ASTM D 3702	3)
Wear (K) factor	Against Steel, 40 psi, 50 fpm	3500*10 <sup>-10</sup>	in <sup>3</sup> -min/ft-lbs-hr	ASTM D 3702	4)
Thermal properties	condition	value	unit	test method	comment
Vicat softening point		224	°F	-	1)
Glass transition temperature		220	°F	ASTM D 3418	(1) Injection molded data (2) Injection molded data (3) Injection molded data (4) per UL746B (5) Injection molded data
Deflection temperature	@ 66 psi	200	°F	ASTM D 648	2)
Deflection temperature	@264 psi	177	°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 <sup>-5</sup>	in/in/°F	ASTM D 696	5)
Electrical properties	condition	value	unit	test method	comment
surface resistivity		1.0*10 <sup>14</sup>	Ω/square	ASTM D 257	1)
volume resistance		1*10 <sup>15</sup>	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	unit	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.17	%	ASTM D 570	(1) Injection molded data (1.5mm thick)
Moisture absorption	@ saturation, 73 °F	0.70	%	ASTM D 570	
Flammability (UL94)		HB		-	1)

→ Resin specification:  
ASTM D4673-02 (Reapproved 2008) ABS220B44500  
Shapes specification:  
NONE

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