



## ABS (Acrylonitrile Butadiene Styrene)

ABS is a low cost engineering plastic that is easy to machine and fabricate. ABS is an ideal material for structural applications when impact resistance, strength and stiffness are required. It is widely used for machining pre-production prototypes since it has excellent dimensional stability and is easy to paint and glue. Natural (beige) ABS and black ABS are FDA compliant for use in food processing applications. The following physical property information is based on typical values of the base acrylonitrile-butadiene-styrene resin.

### Attributes

- Excellent impact resistance
- Good machinability
- Excellent aesthetic qualities
- Easy to paint and glue
- Good strength and stiffness

### Applications

- Machined prototypes
- Structural components
- Support blocks
- Housings
- Covers

Properties	ASTM Test Method	Units	Nominal Value
<b>Physical</b>			
Specific Gravity	D 792	g/cm <sup>3</sup>	1.04
Water Absorption, @ 24hours	D 570	%	0.3
Water Absorption @ Saturation	D 570	%	
<b>Mechanical</b>			
Tensile Strength	D 638	psi	6,100
Tensile Modulus	D 638	psi	310,000
Tensile Elongation	D 638	%	20
Flexural Strength	D 790	psi	10,500
Flexural Modulus	D 790	psi	340,000
Compressive Strength	D 695	psi	2,900
Compressive Modulus	D 695	psi	
Notched Izod Impact	D256	ft. lbs. /in.	7.7
Rockwell Hardness	D 785	R	R105
Shore Hardness	D 2240	D	
Shear Strength	D 732	psi	
Deformation Under Load	D 621	%	
Dynamic Coefficient of Friction	D 1894		0.35
<b>Thermal</b>			
Heat Deflection Temperature			
@ 66psi	D 648	°F	214
@ 264 psi	D 648	°F	203
Coefficient of Thermal Expansion	D 696	in./in./°F	5.20 x 10-5
Continuous Service Temperature		°F	160
Intermittent Service Temperature		°F	210
Melting Point	D 3418	°F	
<b>Electrical</b>			
Volume Resistivity	D257	ohm/sq	10 <sup>15</sup>
Surface Resistivity	d257	ohm/cm	10 <sup>15</sup>
Dielectric Strength	D 149	v/mil	450
Dielectric Constant			
60Hz	D 150		
1000Hz	D 150		
1MHz	D 150		
<b>Compliance</b>			
	FDA		
	USDA 3A		