

TECARAN ABS natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

ABS (Acrylonitrile-butadiene-styrene copolymer)

Colour

beige opaque

Density

1.02 g/cm³

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 | | 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 | 5,700 | psi | ASTM D 638 | (2) Injection molded data |
| Tensile strength at break | @ 73 °F | 5,100 | psi | ASTM D 638 | (3) Injection molded data 1) |
| Elongation at yield (tensile test) | @ 73 °F | 2.5 | % | ASTM D 638 | |
| Elongation at break (tensile test) | @ 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, 1% strain | 1,080 | psi | ASTM D 695 | |
| Compression strength | @ 73 °F, 10% strain | 6,000 | 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 | 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 | 3,500*10 ⁻¹⁰ | in ³ -min/ft-lbs-hr | ASTM D 3702 | 4) |
| Thermal properties | condition | value | | test method | comment |
| Vicat softening point | | 224 | °F | - | 1) |
| 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 | - | 4) |
| Service temperature | Long Term | 160 | °F | - | 5) |
| Thermal expansion (CLTE) | -40F to 100F | 5.6*10 ⁻⁵ | in/in/°F | ASTM D 696 | |
| Electrical properties | condition | value | | test method | comment |
| surface resistivity | | 1.0*10 ¹⁴ | Ω/square | ASTM D 257 | 1) |
| 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 | @ 24 hrs, 73 °F | 0.13 | % | ASTM D 570 | (1) Injection molded data |
| Moisture absorption | @ saturation, 73 °F | 0.70 | % | ASTM D 570 | (1.5mm thick) |
| Flammability (UL94) | | HB | | - | 1) |

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

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