

## TECANAT® natural - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PC (Polycarbonate)

### Colour

transparent transparent

### Density

1.19 g/cm<sup>3</sup>

### Main features

- excellent impact strength
- excellent strength and stiffness
- excellent dimensional stability
- good machinability

### Target Industries

- aircraft and aerospace technology
- food engineering
- food processing
- cleanroom technology
- packaging and paper machinery

| Mechanical properties                 | condition                     | value                 | unit                           | test method | comment  |
|---------------------------------------|-------------------------------|-----------------------|--------------------------------|-------------|--|
| Modulus of elasticity (tensile test)  | @ 73 °F                       | 340,000               | psi                            | ASTM D 638  | (1) Injection molded data<br>(2) Injection molded data<br>(3) Injection molded data<br>(4) per ASTM D732 |
| Tensile strength at yield             | @ 73 °F                       | 9,300                 | psi                            | ASTM D 638  |  |
| Elongation at break (tensile test)    | @ 73 °F                       | 90                    | %                              | ASTM D 638  |  |
| Flexural strength                     | @ 73 °F                       | 12,000                | psi                            | ASTM D 790  |  |
| Modulus of elasticity (flexural test) | @ 73 °F                       | 328,000               | psi                            | ASTM D 790  |  |
| Compression strength                  | @1% strain, 73 °F             | 2,100                 | psi                            | ASTM D 695  |  |
| Compression strength                  | @10% strain, 73 °F            | 10,000                | psi                            | ASTM D 695  |  |
| Compression modulus                   | @ 73 °F                       | 245,000               | psi                            | ASTM D 695  |  |
| Impact strength (Izod)                | @ 73 °F                       | 2.5                   | ft-lbs/in                      | ASTM D 256  |  |
| Impact strength (Izod)                | unnotched                     | 65                    | ft-lbs/in                      | ASTM D 256  |  |
| Rockwell hardness                     | @ 73 °F<br>M Scale (R Scale)  | 70 (118)              |                                | ASTM D 785  | 1)   |
| Shore hardness                        | D scale                       | 79                    |                                | ASTM D 785  |  |
| Coefficient of friction               | Dynamic, 40 psi, 50 fpm       | 0.38                  |                                | ASTM D 3702 | 2)   |
| Wear (K) factor                       | Against Steel, 40 psi, 50 fpm | 2500*10 <sup>-7</sup> | in <sup>3</sup> -min/ft-lbs-hr | ASTM D 3702 | 3)   |
| Shear strength                        |                               | 9,900                 | psi                            | -           | 4)   |
| Thermal properties                    | condition                     | value                 | unit                           | test method | comment  |
| Vicat softening point                 |                               | 309                   | °F                             | ASTM D 1525 | 1)   |
| Deflection temperature                | @ 66 psi                      | 280                   | °F                             | ASTM D 648  | 2)   |
| Deflection temperature                | @264 psi                      | 295                   | °F                             | ASTM D 648  | 3) per UL746B<br>4) Injection molded data  |
| Service temperature                   | Intermittent                  | 275                   | °F                             | -           | 5) per ASTM C351 Injection molded data   |
| Service temperature                   | Long Term                     | 250                   | °F                             | -           | 6) Injection molded data   |
| Thermal expansion (CLTE)              |                               | 3.8                   | *10 <sup>-5</sup> in/in/°F     | ASTM D 696  | 4)   |
| Specific heat                         |                               | 0.30                  | BTU/lb-F°                      | -           | 5)   |
| Thermal conductivity                  |                               | 1.39                  | BTU-in/hr-ft <sup>2</sup> -°F  | ASTM C 177  | 6)   |
| Electrical properties                 | condition                     | value                 | unit                           | test method | comment  |
| volume resistance                     | @ 500V                        | 1.0*10 <sup>15</sup>  | Ω*cm                           | ASTM D 257  | 1)   |
| Dielectric strength                   |                               | 365                   | V/mil                          | ASTM D 149  | 2) Injection molded data<br>3) Injection molded data   |
| Dissipation factor                    | @ 60 Hz, 73 °F                | 0.0009                |                                | ASTM D 150  | 2)   |
| Dielectric constant                   | @ 60 Hz, 73 °F, 50% RH        | 2.87                  |                                | ASTM D 150  |  |
| Dielectric constant                   | @ 1MHz                        | 2.96                  |                                | ASTM D 150  | 3)   |
| Other properties                      | condition                     | value                 | unit                           | test method | comment  |
| Moisture absorption                   | @ 24 hrs, 73 °F               | 0.07                  | %                              | ASTM D 570  | 1)   |
| Moisture absorption                   | @ saturation, 73 °F           | 0.35                  | %                              | ASTM D 570  | 2)   |
| Flammability (UL94)                   |                               | HB                    |                                | -           | 3) Injection molded data   |
| Flammability                          |                               | Self extinguishing    |                                | -           | 4) ASTM D635   |

→ Resin specification:  
ASTM D3935-09 PC0150B34840  
Shapes specification:  
ASTM D6098-10 S-PC0111

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