

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

### Chemical Designation

PA 6 (Polyamide 6)

### Colour

natural white

### Density

1.14 g/cm<sup>3</sup>

### Main features

- good wear properties
- good mechanical properties
- high fatigue strength
- good damping
- high mechanical load capacity
- resistant to many oils, greases and fuels

### Target Industries

- construction industry
- gear manufacturing
- oil and gas industry
- conveyor technology
- agricultural machinery
- heavy duty industry
- food engineering
- food processing
- mining industry

| Mechanical properties                 | condition                     | value                 | unit                           | test method | comment                              |
|---------------------------------------|-------------------------------|-----------------------|--------------------------------|-------------|--------------------------------------|
| Modulus of elasticity (tensile test)  | @ 73 °F                       | 400,000               | psi                            | ASTM D 638  | (1) Data obtained from public source |
| Tensile strength at yield             | @ 73 °F                       | 12,000                | psi                            | ASTM D 638  | (2) Data obtained from public source |
| Elongation at yield (tensile test)    | @ 73 °F                       | 4                     | %                              | ASTM D 638  | (3) Data obtained from public source |
| Elongation at break (tensile test)    | @ 73 °F                       | 30                    | %                              | ASTM D 638  |                                      |
| Flexural strength                     | @ 73 °F                       | 12,500                | psi                            | ASTM D 790  |                                      |
| Modulus of elasticity (flexural test) | @ 73 °F                       | 350,000               | psi                            | ASTM D 790  |                                      |
| Compression strength                  | @ 10% strain                  | 14,400                | psi                            | ASTM D 695  |                                      |
| Compression strength                  | @ 1% strain                   | 3,400                 | psi                            | ASTM D 695  |                                      |
| Compression modulus                   | @ 73 °F                       | 360,000               | psi                            | ASTM D 695  |                                      |
| Impact strength (Izod)                | @ 73 °F                       | 1.4                   | ft-lbs/in                      | ASTM D 256  |                                      |
| Rockwell hardness                     | @ 73 °F<br>R Scale            | 120                   |                                | ASTM D 785  |                                      |
| Coefficient of friction               | Dynamic, 40 psi, 50 fpm       | 0.26                  |                                | ASTM D 3702 | 2)                                   |
| Wear (K) factor                       | Against Steel, 40 psi, 50 fpm | 200*10 <sup>-10</sup> | in <sup>3</sup> -min/ft-lbs-hr | ASTM D 3702 | 3)                                   |
| Thermal properties                    | condition                     | value                 | unit                           | test method | comment                              |
| Melting temperature                   |                               | 428                   | °F                             | ASTM D 2133 | (1) Data obtained from public source |
| Deflection temperature                | @ 66 psi                      | 370                   | °F                             | ASTM D 648  | (2) Data obtained from public source |
| Deflection temperature                | @264 psi                      | 200                   | °F                             | ASTM D 648  | (3) Data obtained from public source |
| Service temperature                   | Intermittent                  | 300                   | °F                             | -           |                                      |
| Service temperature                   | Long Term                     | 200                   | °F                             | -           |                                      |
| Thermal expansion (CLTE)              |                               | 4.0                   | *10 <sup>-5</sup> in/in/°F     | ASTM D 696  | 3)                                   |
| Specific heat                         |                               | 0.40                  | BTU/lb-F°                      | -           |                                      |
| Thermal conductivity                  |                               | 1.67                  | BTU-in/hr-ft <sup>2</sup> -°F  | -           |                                      |
| Electrical properties                 | condition                     | value                 | unit                           | test method | comment                              |
| surface resistivity                   |                               | 1.0*10 <sup>14</sup>  | Ω/square                       | ASTM D 257  | (1) Data obtained from public source |
| volume resistivity                    |                               | 10 <sup>14</sup>      | Ω*cm                           | ASTM D 257  | (2) Data obtained from public source |
| Dielectric strength                   |                               | 500                   | V/mil                          | ASTM D 149  |                                      |
| Dielectric constant                   | @ 60 Hz, 73 °F, 50% RH        | 3.7                   |                                | ASTM D 150  |                                      |
| Other properties                      | condition                     | value                 | unit                           | test method | comment                              |
| Moisture absorption                   | @ 24 hrs, 73 °F               | 1.2                   | %                              | ASTM D 570  | (1) Data obtained from public source |
| Moisture absorption                   | @ saturation, 73°F            | 5.5                   | %                              | ASTM D 570  | (2) estimated                        |
| Flammability (UL94)                   |                               | HB                    |                                | -           | 2)                                   |

→ Resin specification:

Shapes specification:  
ASTM D5989-11 S-PA0211

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