

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

### Chemical Designation

PA 6 C (Cast polyamide 6)

### Colour

ivory opaque

### Density

1.15 g/cm<sup>3</sup>

This data sheet is only for development purposes and can be changed without prior notice. The commercialisation of the product is not guaranteed.

### Main features

- from bio-based/ biomass-balanced raw materials with optimized PCF
- good damping
- good slide and wear properties
- electrically insulating
- high strength
- good wear properties
- resistant to many oils, greases and fuels
- high toughness

### Target Industries

- mechanical engineering
- food technology
- oil and gas industry
- automotive industry
- heavy duty industry

| Mechanical properties                 | parameter                    | value            | unit                             | norm                 | comment   |
|---------------------------------------|------------------------------|------------------|----------------------------------|----------------------|---|
| Tensile strength                      | 50mm/min                     | 83               | MPa                              | DIN EN ISO 527-2     | (1) For tensile test: specimen type 1b  |
| Modulus of elasticity (tensile test)  | 1mm/min                      | 3500             | MPa                              | DIN EN ISO 527-2     | (1) (2) For flexural test: support span 64mm, norm specimen.  |
| Tensile strength at yield             | 50mm/min                     | 80               | MPa                              | DIN EN ISO 527-2     | (3) Specimen 10x10x10mm   |
| Elongation at yield (tensile test)    | 50mm/min                     | 4                | %                                | DIN EN ISO 527-2     | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.  |
| Elongation at break (tensile test)    | 50mm/min                     | 40               | %                                | DIN EN ISO 527-2     | (5) For Charpy test: support span 64mm, norm specimen.  |
| Flexural strength                     | 2mm/min, 10 N                | 109              | MPa                              | DIN EN ISO 178       | (2) n.b. = not broken   |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N                | 3200             | MPa                              | DIN EN ISO 178       |   |
| Compression strength                  | 1% / 2% / 5%<br>5mm/min, 10N | 19/36/83         | MPa                              | EN ISO 604           | (3)   |
| Compression modulus                   | 5mm/min, 10 N                | 2900             | MPa                              | EN ISO 604           | (4)   |
| Impact strength (Charpy)              | max. 7.5J                    | n.b.             | kJ/m <sup>2</sup>                | DIN EN ISO 179-1eU   | (5)   |
| Notched impact strength (Charpy)      | max. 7.5J                    | 4                | kJ/m <sup>2</sup>                | DIN EN ISO 179-1eA   |   |
| Shore hardness                        | D                            | 83               |                                  | DIN EN ISO 868       |   |
| Thermal properties                    | parameter                    | value            | unit                             | norm                 | comment   |
| Glass transition temperature          |                              | 40               | °C                               | DIN EN ISO 11357     | (1)   |
| Melting temperature                   |                              | 215              | °C                               | DIN EN ISO 11357     | (2)   |
| Service temperature                   | short term                   | 170              | °C                               |                      | (2)   |
| Service temperature                   | long term                    | 100              | °C                               |                      |   |
| Thermal expansion (CLTE)              | 23-60°C, long.               | 12               | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |   |
| Thermal expansion (CLTE)              | 23-100°C, long.              | 12               | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |   |
| Specific heat                         |                              | 1.7              | J/(g*K)                          | ISO 22007-4:2008     |   |
| Thermal conductivity                  |                              | 0.38             | W/(K*m)                          | ISO 22007-4:2008     |   |
| Electrical properties                 | parameter                    | value            | unit                             | norm                 | comment   |
| surface resistivity                   |                              | 10 <sup>14</sup> | Ω                                | DIN IEC 60093        |   |
| volume resistivity                    |                              | 10 <sup>14</sup> | Ω*cm                             | DIN IEC 60093        |   |
| Other properties                      | parameter                    | value            | unit                             | norm                 | comment   |
| Water absorption                      | 24h / 96h (23°C)             | 0.2 / 0.4        | %                                | DIN EN ISO 62        | (1) (1) Ø ca. 50mm, h=13mm  |
| Resistance to hot water/ bases        |                              | (+)              |                                  | -                    | (2) (2) (+) limited resistance  |
| Resistance to weathering              |                              | -                |                                  | -                    | (3) (3) - poor resistance   |
| Flammability (UL94)                   | corresponding to             | HB               |                                  | DIN IEC 60695-11-10; | (4) (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory. |

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