# TECAST L yellow - Stock Shapes (rods, plates, tubes)

**Chemical Designation**
PA 6 C (Cast polyamide 6)

**Colour**
yellow opaque

**Density**
1.14 g/cm$^3$

**Fillers**
oil

Data generated directly after machining (standard climate Germany).

**Main features**
- good slide and wear properties
- good wear properties
- electrically insulating
- high toughness
- resistant to many oils, greases and fuels
- high strength

**Target Industries**
- mechanical engineering
- automotive industry
- heavy duty industry

| Mechanical properties | parameter | value | unit | norm | | comment |
|---|---|---|---|---|---|---|
| Tensile strength | 50mm/min | 70 | MPa | DIN EN ISO 527-2 | | (1) For tensile test: specimen type 1b<br>(2) For flexural test: support span 64mm, norm specimen.<br>(3) Specimen 10x10x10mm<br>(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.<br>(5) For Charpy test: support span 64mm, norm specimen.<br>n.b. = not broken |
| Modulus of elasticity (tensile test) | 1mm/min | 3100 | MPa | DIN EN ISO 527-2 | 1) | |
| Tensile strength at yield | 50mm/min | 68 | MPa | DIN EN ISO 527-2 | | |
| Elongation at yield (tensile test) | 50mm/min | 4 | % | DIN EN ISO 527-2 | | |
| Elongation at break (tensile test) | 50mm/min | 50 | % | DIN EN ISO 527-2 | | |
| Flexural strength | 2mm/min, 10 N | 95 | MPa | DIN EN ISO 178 | 2) | |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 2900 | MPa | DIN EN ISO 178 | | |
| Compression strength | 1% / 2% / 5% 5mm/min, 10 N | 21/37/78 | MPa | EN ISO 604 | 3) | |
| Compression modulus | 5mm/min, 10 N | 2700 | MPa | EN ISO 604 | 4) | |
| Impact strength (Charpy) | max. 7,5J | n.b. | kJ/m$^2$ | DIN EN ISO 179-1eU | 5) | |
| Notched impact strength (Charpy) | max. 7,5J | 6 | kJ/m$^2$ | DIN EN ISO 179-1eA | | |
| Shore hardness | D | 80 | | DIN EN ISO 868 | | |

| Thermal properties | parameter | value | unit | norm | | comment |
|---|---|---|---|---|---|---|
| Glass transition temperature | | 42 | °C | DIN EN ISO 11357 | 1) | (1) Found in public sources.<br>(2) Found in public sources. Individual testing regarding application conditions is mandatory. |
| Melting temperature | | 216 | °C | DIN EN ISO 11357 | | |
| Service temperature | short term | 170 | °C | | 2) | |
| Service temperature | long term | 100 | °C | | | |
| Thermal expansion (CLTE) | 23-60°C, long. | 13 | $10^{-5}$ K$^{-1}$ | DIN EN ISO 11359-1;2 | | |
| Thermal expansion (CLTE) | 23-100°C, long. | 13 | $10^{-5}$ K$^{-1}$ | DIN EN ISO 11359-1;2 | | |
| Specific heat | | 1.7 | J/(g*K) | ISO 22007-4:2008 | | |
| Thermal conductivity | | 0.37 | W/(K*m) | ISO 22007-4:2008 | | |

| Electrical properties | parameter | value | unit | norm | | comment |
|---|---|---|---|---|---|---|
| surface resistivity | | $10^{14}$ | Ω | DIN IEC 60093 | | |
| volume resistivity | | $10^{14}$ | 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<br>(2) (+) limited resistance<br>(3) - poor resistance<br>(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. |
| Resistance to hot water/ bases | | (+) | | - | 2) | |
| Resistance to weathering | | - | | - | 3) | |
| Flammability (UL94) | corresponding to | HB | | DIN IEC 60695-11-10; | 4) | |

Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions (typically rods with diameter 40-60 mm according to DIN EN 15860) on cast and machined specimen. As the properties depend on the dimensions of the semi-finished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com. Technical changes reserved.

**Ensinger India Engineering Plastics Pvt Ltd.**
**2205, 22nd Floor, SOLUS Building,**
**Hiranandani Estate, Thane West - 400607,**
**India**

Phone +91 22-49797082
www.ensinger.in