

# TECASINT 5501 ESD light-brown - Stock Shapes (rods, plates, tubes)

## Chemical Designation

PI (Polyimide)

## Colour

brown

## Density

1.68 g/cm<sup>3</sup>

## Fillers

glass fibres

## Main features

- electrically static dissipative
- high thermal and mechanical capacity
- low thermal expansion
- high creep resistance
- resistance against high energy radiation

## Target Industries

- electronics
- semiconductor technology
- cryogenic engineering
- electrical engineering
- mechanical engineering
- nuclear and vacuum technology

| Mechanical properties                 | parameter           | value                             | unit                             | norm                 | comment                                                                                                                                                                                            |
|---------------------------------------|---------------------|-----------------------------------|----------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tensile strength                      | 50 mm/min           | 93                                | MPa                              | DIN EN ISO 527-1     | (1) eU                                                                                                                                                                                             |
| Modulus of elasticity (tensile test)  | 1 mm/min            | 7000                              | MPa                              | DIN EN ISO 527-1     |                                                                                                                                                                                                    |
| Elongation at break (tensile test)    | 50 mm/min           | 1.5                               | %                                | DIN EN ISO 527-1     |                                                                                                                                                                                                    |
| Flexural strength                     | 10 mm/min           | 127                               | MPa                              | DIN EN ISO 178       |                                                                                                                                                                                                    |
| Modulus of elasticity (flexural test) | 2 mm/min            | 6900                              | MPa                              | DIN EN ISO 178       |                                                                                                                                                                                                    |
| Elongation at break (flexural test)   | 10 mm/min           | 2.7                               | %                                | DIN EN ISO 178       |                                                                                                                                                                                                    |
| Compression strength                  | 10 mm/min           | 260                               | MPa                              | EN ISO 604           |                                                                                                                                                                                                    |
| Compressive strain at break           | 10 mm/min           | 20                                | %                                | EN ISO 604           |                                                                                                                                                                                                    |
| Impact strength (Charpy)              | max 7.5 J           | 16.1                              | kJ/m <sup>2</sup>                | DIN EN ISO 179-1     | 1)                                                                                                                                                                                                 |
| Shore hardness                        | Shore D             | 93                                |                                  | DIN EN ISO 868       |                                                                                                                                                                                                    |
| Rockwell hardness                     | M                   | 119                               |                                  | ISO 2039/2           |                                                                                                                                                                                                    |
| Thermal properties                    | parameter           | value                             | unit                             | norm                 | comment                                                                                                                                                                                            |
| Glass transition temperature          |                     | 329                               | °C                               | DIN EN ISO 11357     | (1) Found in public sources. Individual testing regarding application conditions is mandatory.                                                                                                     |
| Heat distortion temperature           | 1,8 MPa             | 347                               | °C                               | DIN 53 461           |                                                                                                                                                                                                    |
| Service temperature                   | short-term          | 300                               | °C                               | -                    | 1)                                                                                                                                                                                                 |
| Thermal expansion (CLTE)              | 23-100°C            | 2.6                               | 10 <sup>-5</sup> K <sup>-1</sup> | DIN 53 752           | 2)                                                                                                                                                                                                 |
| Thermal expansion (CLTE)              | 100-150°C           | 2.9                               | 10 <sup>-5</sup> K <sup>-1</sup> | DIN 53 752           | 3)                                                                                                                                                                                                 |
| Thermal expansion (CLTE)              | 50-200°C            | 2.9                               | 10 <sup>-5</sup> K <sup>-1</sup> | DIN 53 752           | 4)                                                                                                                                                                                                 |
| Specific heat                         |                     | 1.04                              | J/(g*K)                          | DIN EN 821           |                                                                                                                                                                                                    |
| Thermal conductivity                  | 40°C                | 0.34                              | W/(K*m)                          | DIN EN 821           |                                                                                                                                                                                                    |
| Electrical properties                 | parameter           | value                             | unit                             | norm                 | comment                                                                                                                                                                                            |
| surface resistivity                   | 23°C                | 10 <sup>6</sup> - 10 <sup>8</sup> | Ω                                | DIN EN 61340-2-3     |                                                                                                                                                                                                    |
| volume resistivity                    | 23°C                | 10 <sup>6</sup> - 10 <sup>8</sup> | Ω*cm                             | DIN EN 61340-2-3     |                                                                                                                                                                                                    |
| Other properties                      | parameter           | value                             | unit                             | norm                 | comment                                                                                                                                                                                            |
| Water absorption                      | 24 h in water, 23°C | 0.63                              | %                                | DIN EN ISO 62        |                                                                                                                                                                                                    |
| Flammability (UL94)                   | corresponding to    | V0                                |                                  | DIN IEC 60695-11-10; | 1) (1) 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. |

→ TECASINT 5000 series shows significant water uptake. Parts have to be pre-dried before fast heating to above 200 °C (drying process: 2 h per 3 mm wall thickness at 150 °C).

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