

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

Chemical Designation

PI (Polyimide)

Colour

brown

Density

1.68 g/cm³

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 ² | 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 ⁻⁵ K ⁻¹ | DIN 53 752 | 2) |
| Thermal expansion (CLTE) | 100-150°C | 2.9 | 10 ⁻⁵ K ⁻¹ | DIN 53 752 | 3) |
| Thermal expansion (CLTE) | 50-200°C | 2.9 | 10 ⁻⁵ K ⁻¹ | 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 ⁶ - 10 ⁸ | Ω | DIN EN 61340-2-3 | |
| volume resistivity | 23°C | 10 ⁶ - 10 ⁸ | 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) |

→ TECASINT 5000 series show 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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