

TECASINT 5511 SD light-brown - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

brown

Density

1.65 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, 23°C | 97 | MPa | DIN EN ISO 527-1 | |
| Modulus of elasticity (tensile test) | 1 mm/min, 23°C | 5600 | MPa | DIN EN ISO 527-1 | |
| Elongation at break (tensile test) | 50 mm/min, 23°C | 2,1 | % | DIN EN ISO 527-1 | |
| Flexural strength | 10 mm/min, 23°C | 128 | MPa | DIN EN ISO 178 | |
| Modulus of elasticity (flexural test) | 2 mm/min, 23°C | 5588 | MPa | DIN EN ISO 178 | |
| Elongation at break (flexural test) | 10 mm/min, 23°C | 2,3 | % | DIN EN ISO 178 | |
| Compression strength | 10 mm/min, 23°C | 254 | MPa | EN ISO 604 | |
| Compressive strain at break | 10 mm/min, 23°C | 21,4 | % | EN ISO 604 | |
| Compression modulus | 1 mm/min | 5890 | MPa | EN ISO 604 | |
| Shore hardness | Shore D, 23°C | 92 | | DIN EN ISO 868 | |
| 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. |
| Service temperature | lower operating temperature | - 20 | °C | - | 1) |
| Service temperature | short-term | 300 | °C | - | 2) |
| Service temperature | long-term | 250 | °C | - | 3) |
| Thermal expansion (CLTE) | 23-100°C | 32 | 10 ⁻⁶ K ⁻¹ | DIN EN ISO 11359-1;2 | 4) |
| Thermal expansion (CLTE) | 100-150°C | 35 | 10 ⁻⁶ K ⁻¹ | DIN EN ISO 11359-1;2 | 5) |
| Thermal expansion (CLTE) | 50-200°C | 35 | 10 ⁻⁶ K ⁻¹ | DIN EN ISO 11359-1;2 | 6) |
| Specific heat | | 1,01 | J/(g*K) | DIN EN 821 | (4) Thermal expansion XY axis |
| Thermal conductivity | 40°C | 0,32 | W/(K*m) | DIN EN 821 | (5) Thermal expansion XY axis |
| | | | | | (6) Thermal expansion XY axis |
| Electrical properties | parameter | value | unit | norm | comment |
| surface resistance | 23°C | 10 ⁰⁹ - 10 ¹¹ | Ω | ANSI ESD STM 11.11 | |
| surface resistivity | 23°C | 10 ¹⁰ - 10 ¹² | Ω/square | ANSI ESD STM 11.11 | |
| volume resistance | 23°C | 10 ⁰⁹ - 10 ¹¹ | Ω | ANSI ESD STM 11.12 | |
| volume resistivity | 23°C | 10 ¹⁰ - 10 ¹² | Ω*cm | ANSI ESD STM 11.12 | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24 h in water, 23°C | 0.60 | % | DIN EN ISO 62 | (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. |
| 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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