

TECAPEI GF30 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PEI (Polyetherimide)

Colour

amber opaque

Density

1.51 g/cm³

Fillers

glass fibres

Main features

- high dimensional stability
- good heat deflection temperature
- high thermal and mechanical capacity
- high strength
- high creep resistance
- electrically insulating
- resistance against high energy radiation
- sensitive to stress cracking

Target Industries

- electronics
- semiconductor technology
- automotive industry
- mechanical engineering
- vacuum technology

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|--------------------------|------------------|----------------------------------|----------------------|--|
| Tensile strength | 5mm/min | 135 | MPa | DIN EN ISO 527-2 | (1) For tensile test: specimen type 1b |
| Modulus of elasticity (tensile test) | 1mm/min | 5300 | MPa | DIN EN ISO 527-2 | 1) (2) For flexural test: support span 64mm, norm specimen. |
| Tensile strength at yield | 5mm/min | 135 | MPa | DIN EN ISO 527-2 | (3) Specimen 10x10x10mm |
| Elongation at yield (tensile test) | 5mm/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 | 4 | % | DIN EN ISO 527-2 | (5) For Charpy test: support span 64mm, norm specimen. |
| Flexural strength | 2mm/min, 10 N | 195 | MPa | DIN EN ISO 178 | 2) (6) Specimen in 4mm thickness |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 5500 | MPa | DIN EN ISO 178 | |
| Compression strength | 1% / 2% 5mm/min, 10 N | 18 / 39 | MPa | EN ISO 604 | 3) |
| Compression modulus | 5mm/min, 10 N | 4200 | MPa | EN ISO 604 | 4) |
| Impact strength (Charpy) | max. 7.5J | 51 | kJ/m ² | DIN EN ISO 179-1eU | 5) |
| Notched impact strength (Charpy) | max. 2J | 6 | kJ/m ² | DIN EN ISO 179-1eA | |
| Ball indentation hardness | | 325 | MPa | ISO 2039-1 | 6) |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 213 | °C | DIN EN ISO 11357 | (1) Found in public sources. |
| Melting temperature | | | °C | DIN EN ISO 11357 | Individual testing regarding application conditions is mandatory. |
| Service temperature | short term | 200 | °C | | 1) |
| Service temperature | long term | 170 | °C | | |
| Thermal expansion (CLTE) | 23-60°C, long. | 3 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Thermal expansion (CLTE) | 23-100°C, long. | 3 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Thermal expansion (CLTE) | 100-150°C, long. | 4 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Electrical properties | parameter | value | unit | norm | comment |
| surface resistivity | | 10 ¹⁴ | Ω | - | |
| volume resistivity | | 10 ¹⁴ | Ω*cm | - | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24h / 96h (23°C) | 0.04 / <0.1 | % | DIN EN ISO 62 | 1) (1) Ø ca. 50mm, h=13mm |
| Resistance to hot water/ bases | | + | - | - | 2) (2) + good resistance |
| Resistance to weathering | | - | - | - | 3) (3) - poor resistance |
| Flammability (UL94) | corresponding to | V0 | | 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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