

TECASON P MT black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PPSU (Polyphenylsulfone)

Colour

black opaque

Density

1.31 g/cm³

Main features

- high thermal and mechanical capacity
- good heat deflection temperature
- hydrolysis and superheated steam resistant
- good impact strength
- high stiffness
- high strength
- good chemical resistance
- high gamma radiation resistance

Target Industries

- medical technology
- mechanical engineering
- vacuum technology
- automotive industry

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|---|------------------|----------------------------------|----------------------|---|
| Tensile strength | 50mm/min | 81 | MPa | DIN EN ISO 527-2 | (1) For tensile test: specimen type 1b |
| Modulus of elasticity (tensile test) | 1mm/min | 2300 | MPa | DIN EN ISO 527-2 | 1) (2) For flexural test: support span 64mm, norm specimen. |
| Tensile strength at yield | 50mm/min | 81 | MPa | DIN EN ISO 527-2 | (3) Specimen 10x10x10mm |
| Elongation at yield (tensile test) | 50mm/min | 7 | % | DIN EN ISO 527-2 | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. |
| Elongation at break (tensile test) | 50mm/min | > 50 | % | DIN EN ISO 527-2 | (5) For Charpy test: support span 64mm, norm specimen. |
| Flexural strength | 2mm/min, 10 N | 107 | MPa | DIN EN ISO 178 | 2) n.b. = not broken |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 2300 | MPa | DIN EN ISO 178 | |
| Compression strength | 1% / 2% / 5% 5mm/min, 10 N | 18/30/66 | MPa | EN ISO 604 | 3) |
| Compression modulus | 5mm/min, 10 N | 2000 | 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 | 13 | kJ/m ² | DIN EN ISO 179-1eA | |
| Shore hardness | D | 84 | | DIN EN ISO 868 | |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 218 | °C | DIN EN ISO 11357 | 1) (1) Found in public sources. |
| Melting temperature | | n.a. | °C | DIN EN ISO 11357 | 2) (2) n.a. = not applicable |
| Service temperature | short term | 190 | °C | | 3) (3) Found in public sources. |
| Service temperature | long term | 170 | °C | | Individual testing regarding application conditions is mandatory. |
| Thermal expansion (CLTE) | 23-60°C, long. | 6 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Thermal expansion (CLTE) | 23-100°C, long. | 6 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Specific heat | | 1.1 | J/(g*K) | ISO 22007-4:2008 | |
| Thermal conductivity | | 0.25 | W/(K*m) | ISO 22007-4:2008 | |
| Electrical properties | parameter | value | unit | norm | comment |
| surface resistivity | Silver electrode, 23°C, 12% r.h. | 10 ¹⁴ | Ω | - | 1) (1) Specimen in 20mm thickness |
| volume resistivity | Silver electrode, 23°C, 12% r.h. | 10 ¹⁴ | Ω*cm | - | 2) (2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise. |
| Dielectric strength | 23°C, 50% r.h. | 76 | kV/mm | ISO 60243-1 | 3) (3) Specimen in 1mm thickness |
| Resistance to tracking (CTI) | Platin electrode, 23°C, 50% r.h., solvent A | 125 | V | DIN EN 60112 | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24h / 96h (23°C) | 0.1 / 0.2 | % | 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) (+) limited resistance |
| Flammability (UL94) | listed (value at 0.79mm) | V0 | | DIN IEC 60695-11-10; | |

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