

TECASINT 2391 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.53 g/cm³

Fillers

15% molybdenum disulfide (MoS₂)

Main features

- high thermal and mechanical capacity
- very good slide and wear properties
- low outgassing
- very good thermal stability
- good chemical resistance
- high creep resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries

- aircraft and aerospace technology
- cryogenic engineering
- precision engineering
- vacuum technology

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|----------------------|-----------|----------------------------------|----------------------|---|
| Tensile strength | 50 mm/min | 95 | MPa | DIN EN ISO 527-1 | (1) Specimen in 4mm thickness |
| Modulus of elasticity (tensile test) | 1 mm/min | 4100 | MPa | DIN EN ISO 527-1 | |
| Elongation at break (tensile test) | 50 mm/min | 3.5 | % | DIN EN ISO 527-1 | |
| Flexural strength | 10 mm/min | 140 | MPa | DIN EN ISO 178 | |
| Modulus of elasticity (flexural test) | 2 mm/min | 3900 | MPa | DIN EN ISO 178 | |
| Elongation at break (flexural test) | 10 mm/min | 4.0 | % | DIN EN ISO 178 | |
| Compression strength | 10 mm/min | 230 | MPa | EN ISO 604 | |
| Compression strength | 10mm/min, 10% strain | 165 | MPa | EN ISO 604 | |
| Compressive strain at break | 10 mm/min | 35.6 | % | EN ISO 604 | |
| Compression modulus | 1 mm/min | 2000 | MPa | EN ISO 604 | |
| Shore hardness | Shore D | 88 | | DIN EN ISO 868 | |
| Ball indentation hardness | | 265 | MPa | ISO 2039-1 | 1) |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 357 | °C | - | 1) |
| Thermal expansion (CLTE) | 200-300°C | 5.0 / 5.7 | 10 ⁻⁵ K ⁻¹ | DIN 53 752 | 2) |
| Thermal expansion (CLTE) | 50-200°C | 4.0 / 4.7 | 10 ⁻⁵ K ⁻¹ | DIN 53 752 | 3) |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24 h in water, 23°C | 0.53 | % | 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. |
| Water absorption | 24 h in water, 80°C | 1.58 | % | DIN EN ISO 62 | |
| Outgassing in high vacuum | | passed | | ECSS-Q-70-02 | |
| Flammability (UL94) | corresponding to | V0 | | DIN IEC 60695-11-10; | 1) |

→ TECASINT 2000 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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