

TECASINT 1021 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.41 g/cm³

Fillers

15% graphite

Main features

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

Target Industries

- automotive industry
- aircraft and aerospace technology
- cryogenic engineering
- conveyor technology
- hot glass technology
- mechanical engineering
- precision engineering

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|----------------------|-------|-------------------|------------------|------------------|
| Tensile strength | 50 mm/min | 97 | MPa | DIN EN ISO 527-1 | (1) eU (2) eA |
| Modulus of elasticity (tensile test) | 1 mm/min | 4000 | MPa | DIN EN ISO 527-1 | |
| Elongation at break (tensile test) | 50 mm/min | 3.2 | % | DIN EN ISO 527-1 | |
| Flexural strength | 10 mm/min | 150 | MPa | DIN EN ISO 178 | |
| Modulus of elasticity (flexural test) | 2 mm/min | 4000 | MPa | DIN EN ISO 178 | |
| Elongation at break (flexural test) | 10 mm/min | 4.0 | % | DIN EN ISO 178 | |
| Compression strength | 10 mm/min | 210 | MPa | EN ISO 604 | |
| Compression strength | 10mm/min, 10% strain | 175 | MPa | EN ISO 604 | |
| Compression modulus | 1 mm/min | 1880 | MPa | EN ISO 604 | |
| Compressive strain at break | 10 mm/min | 20.1 | % | EN ISO 604 | |
| Impact strength (Charpy) | max 7.5 J | 34 | kJ/m ² | DIN EN ISO 179-1 | 1) |
| Notched impact strength (Charpy) | max 7.5 J | 3.7 | kJ/m ² | DIN EN ISO 179-1 | 2) |
| Shore hardness | Shore D | 88 | | DIN EN ISO 868 | |

| Thermal properties | parameter | value | unit | norm | comment |
|------------------------------|-----------|-------|----------------------------------|------------|---------|
| Glass transition temperature | | 353 | °C | - | 1) |
| Thermal expansion (CLTE) | 50-200°C | 3.8 / | 10 ⁻⁵ K ⁻¹ | DIN 53 752 | 2) |
| Specific heat | | 1.16 | J/(g*K) | - | |
| Thermal conductivity | 40°C | 0.80 | W/(K*m) | ISO 8302 | |

| Other properties | parameter | value | unit | norm | comment |
|---------------------|---------------------|-------|------|----------------------|---|
| Water absorption | 24 h in water, 23°C | 0.78 | % | 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 | 1.57 | % | DIN EN ISO 62 | |
| Flammability (UL94) | corresponding to | V0 | | DIN IEC 60695-11-10; | 1) |

→ TECASINT 1000 series shows 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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