

TECASINT 1021 black - Stock Shapes

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.42 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 |
|---------------------------------------|----------------------------|-------------------|----------------------------------|----------------------|---|
| Modulus of elasticity (tensile test) | 1 mm/min, 23°C | 4000 | MPa | DIN EN ISO 527-1 | |
| Tensile strength | 50 mm/min, 23°C | 97 | MPa | DIN EN ISO 527-1 | |
| Elongation at break | 50 mm/min, 23°C | 2.8 | % | DIN EN ISO 527-1 | |
| Elongation at break | 10 mm/min, 23°C | 4.5 | % | DIN EN ISO 178 | |
| Flexural strength | 10 mm/min, 23°C | 150 | MPa | DIN EN ISO 178 | |
| Modulus of elasticity (flexural test) | 2 mm/min, 23°C | 4000 | MPa | DIN EN ISO 178 | |
| Compression strength | 10 mm/min, 23°C | 210 | MPa | EN ISO 604 | |
| Compression strength | 10mm/min, 10% strain, 23°C | 175 | MPa | EN ISO 604 | |
| Compressive strain at break | 10 mm/min, 23°C | 20.1 | % | EN ISO 604 | |
| Compression modulus | 1 mm/min, 23°C | 1880 | MPa | EN ISO 604 | |
| Impact strength (Charpy) | max 7.5 J, 23°C | 35.1 | kJ/m ² | DIN EN ISO 179-1eU | |
| Notched impact strength (Charpy) | max 7.5 J, 23°C | 4.8 | kJ/m ² | DIN EN ISO 179-1eA | |
| Shore hardness | Shore D, 23°C | 88 | D | DIN 53505 | |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 330 | °C | - | 1) |
| Heat distortion temperature | 1.85 MPa | 300 | °C | DIN 53 461 | (1) DMA, maximum loss factor tan δ (2) Found in public sources. |
| Service temperature | long-term | - | °C | - | 2) |
| Thermal expansion (CLTE) | 50-200°C | 3.8 / | 10 ⁻⁵ K ⁻¹ | DIN 53 752 | Individual testing regarding application conditions is mandatory. (3) Thermal expansion XY/Z axis |
| Specific heat | | 1.13 | J/(g*K) | - | |
| Thermal conductivity | 40°C | 0.53 | W/(K*m) | ISO 8302 | |
| Electrical properties | parameter | value | unit | norm | comment |
| Specific surface resistance | 23°C | < 10 ⁷ | Ω | DIN IEC 60093 | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24 h in water, 23°C | 0.51 | % | 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) |

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