

TECAMID 46 red brown - Stock Shapes

Chemical Designation

PA 46 (Polyamide 46)

Colour

red brown opaque

Density

1.19 g/cm³

Data generated directly after machining
(standard climate Germany).

Main features

- high strength
- high toughness
- good thermal stability
- good heat deflection temperature
- resistant to many oils, greases and fuels
- high moisture absorption

Target Industries

- mechanical engineering
- automotive industry
- conveyor technology

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|--------------------------|------------------|----------------------------------|----------------------|--|
| Modulus of elasticity (tensile test) | 1mm/min | 3300 | MPa | DIN EN ISO 527-2 | 1) (1) For tensile test: specimen type 1b |
| Tensile strength | 50mm/min | 106 | MPa | DIN EN ISO 527-2 | (2) For flexural test: support span 64mm, norm specimen. |
| Tensile strength at yield | 50mm/min | 106 | MPa | DIN EN ISO 527-2 | (3) Specimen 10x10x10mm |
| Elongation at yield | 50mm/min | 21 | % | DIN EN ISO 527-2 | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. |
| Elongation at break | 50mm/min | 32 | % | DIN EN ISO 527-2 | (5) For Charpy test: support span 64mm, norm specimen. |
| Flexural strength | 2mm/min, 10 N | 132 | MPa | DIN EN ISO 178 | 2) n.b. = not broken |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 3300 | MPa | DIN EN ISO 178 | (6) Specimen in 4mm thickness |
| Compression strength | 1% / 2% 5mm/min, 10 N | 20 / 35 | MPa | EN ISO 604 | 3) |
| Compression modulus | 5mm/min, 10 N | 2800 | 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 | 9 | kJ/m ² | DIN EN ISO 179-1eA | |
| Ball indentation hardness | | 187 | MPa | ISO 2039-1 | 6) |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 72 | °C | DIN 53765 | 1) (1) Found in public sources. |
| Melting temperature | | 299 | °C | DIN 53765 | (2) Found in public sources. |
| Service temperature | short term | 220 | °C | | 2) Individual testing regarding application conditions is mandatory. |
| Service temperature | long term | 130 | °C | | |
| Thermal expansion (CLTE) | 23-60°C, long. | 13 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Thermal expansion (CLTE) | 23-100°C, long. | 13 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Specific heat | | 1.7 | J/(g*K) | ISO 22007-4:2008 | |
| Thermal conductivity | | 0.37 | W/(K*m) | ISO 22007-4:2008 | |
| Electrical properties | parameter | value | unit | norm | comment |
| Specific surface resistance | | 10 ¹⁴ | Ω | DIN IEC 60093 | |
| Specific volume resistance | | 10 ¹⁴ | Ω*cm | DIN IEC 60093 | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24h / 96h (23°C) | 0.4 / 0.7 | % | DIN EN ISO 62 | 1) (1) Ø ca. 50mm, h=13mm |
| Resistance to hot water/ bases | | (+) | - | - | 2) (2) (+) limited resistance |
| Resistance to weathering | | - | - | - | 3) (3) - poor resistance |
| Flammability (UL94) | corresponding to | V2 | | 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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