

TECASINT 6012 natural - Direct Forming

Chemical Designation

PI (Polyimide)

Colour

brown-beige

Density

1.35 g/cm³

Production process: direct forming

Main features

- high thermal and mechanical capacity
- very high thermal and oxidative resistance
- low water absorption
- high creep resistance
- low outgassing
- good chemical resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries

- semiconductor technology
- electrical engineering
- electronics
- mechanical engineering
- vacuum technology
- cryogenic engineering
- automotive industry

| <i>Mechanical properties</i> | <i>parameter</i> | <i>value</i> | <i>unit</i> | <i>norm</i> | <i>comment</i> |
|---------------------------------------|----------------------|--------------|----------------------------------|----------------------|--|
| Tensile strength | 50 mm/min | 115 | MPa | DIN EN ISO 527-1 | |
| Modulus of elasticity (tensile test) | 1 mm/min | 4100 | MPa | DIN EN ISO 527-1 | |
| Elongation at break (tensile test) | 50 mm/min | 4.2 | % | DIN EN ISO 527-1 | |
| Flexural strength | 10 mm/min | 175 | MPa | DIN EN ISO 178 | |
| Modulus of elasticity (flexural test) | 2 mm/min | 4100 | MPa | DIN EN ISO 178 | |
| Elongation at break (flexural test) | 10 mm/min | 5.4 | % | DIN EN ISO 178 | |
| Compression strength | 10 mm/min | 410 | MPa | EN ISO 604 | |
| Compression strength | 10mm/min, 10% strain | 165 | MPa | EN ISO 604 | |
| Compressive strain at break | 10 mm/min | 54 | % | EN ISO 604 | |
| Shore hardness | Shore D | 88 | | DIN EN ISO 868 | |
| <i>Thermal properties</i> | <i>parameter</i> | <i>value</i> | <i>unit</i> | <i>norm</i> | <i>comment</i> |
| Glass transition temperature | | 285 | °C | - | 1) (1) DMA, maximum loss factor tan d |
| Thermal expansion (CLTE) | 50-200°C | 3,2 / - | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | 2) (2) Thermal expansion XY/Z axis |
| Thermal expansion (CLTE) | 200-300°C | 4,6 / - | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | 3) (3) Thermal expansion XY/Z axis |
| <i>Other properties</i> | <i>parameter</i> | <i>value</i> | <i>unit</i> | <i>norm</i> | <i>comment</i> |
| Water absorption | 24 h in water, 23°C | 0,8 | % | DIN EN ISO 62 | |
| Flammability (UL94) | corresponding to | V0 | | DIN IEC 60695-11-10; | 1) (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. |

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