

## TECAPEI - Stock Shapes

### Chemical Designation

PEI (Polyetherimide)

### Colour

amber transparent

### Density

1.28 g/cm<sup>3</sup>

### Main features

- high thermal and mechanical capacity
- resistance against high energy radiation
- high dimensional stability
- FDA compliant
- inherent flame retardant

### Target Industries

- electronics
- semiconductor technology
- aircraft and aerospace technology
- food engineering
- medical technology
- automotive industry
- vacuum technology

| Mechanical properties                 | parameter                | value            | unit                              | norm                 | comment |
|---------------------------------------|--------------------------|------------------|-----------------------------------|----------------------|---------|
| Modulus of elasticity (tensile test)  | 1mm/min                  | 3200             | MPa                               | DIN EN ISO 527-2     | 1)      |
| Tensile strength                      | 50mm/min                 | 127              | MPa                               | DIN EN ISO 527-2     |         |
| Tensile strength at yield             | 50mm/min                 | 127              | MPa                               | DIN EN ISO 527-2     |         |
| Elongation at yield                   | 50mm/min                 | 7                | %                                 | DIN EN ISO 527-2     |         |
| Elongation at break                   | 50mm/min                 | 35               | %                                 | DIN EN ISO 527-2     |         |
| Flexural strength                     | 2mm/min, 10 N            | 164              | MPa                               | DIN EN ISO 178       | 2)      |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N            | 3300             | MPa                               | DIN EN ISO 178       |         |
| Compression strength                  | 1% / 2%<br>5mm/min, 10 N | 23 / 41          | MPa                               | EN ISO 604           | 3)      |
| Compression modulus                   | 5mm/min, 10 N            | 2800             | MPa                               | EN ISO 604           | 4)      |
| Impact strength (Charpy)              | max. 7,5J                | 113              | kJ/m <sup>2</sup>                 | DIN EN ISO 179-1eU   | 5)      |
| Ball indentation hardness             |                          | 225              | MPa                               | ISO 2039-1           | 6)      |
| Thermal properties                    | parameter                | value            | unit                              | norm                 | comment |
| Glass transition temperature          |                          | 216              | °C                                | DIN 53765            | 1)      |
| Melting temperature                   |                          | n.a.             | °C                                | DIN 53765            | 2)      |
| Service temperature                   | short term               | 200              | °C                                |                      | 3)      |
| Service temperature                   | long term                | 170              | °C                                |                      |         |
| Thermal expansion (CLTE)              | 23-60°C, long.           | 5                | 10 <sup>-5</sup> *K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Thermal expansion (CLTE)              | 23-100°C, long.          | 5                | 10 <sup>-5</sup> *K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Thermal expansion (CLTE)              | 100-150°C, long.         | 6                | 10 <sup>-5</sup> *K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Specific heat                         |                          | 1.2              | J/(g*K)                           | ISO 22007-4:2008     |         |
| Thermal conductivity                  |                          | 0.21             | W/(K*m)                           | ISO 22007-4:2008     |         |
| Electrical properties                 | parameter                | value            | unit                              | norm                 | comment |
| Surface resistance                    |                          | 10 <sup>14</sup> | Ω                                 | DIN IEC 60093        |         |
| Other properties                      | parameter                | value            | unit                              | norm                 | comment |
| Water absorption                      | 24h / 96h (23°C)         | 0.05 / 0.1       | %                                 | DIN EN ISO 62        | 1)      |
| Resistance to hot water/ bases        |                          | +                |                                   |                      |         |
| Resistance to weathering              |                          | -                |                                   |                      |         |
| Flammability (UL94)                   | corresponding to         | V0               |                                   | DIN IEC 60695-11-10; | 2)      |

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