

# TECATRON PVX - Stock Shapes

## Chemical Designation

PPS (Polyphenylensulfide)

## Colour

black opaque

## Density

1.5 g/cm<sup>3</sup>

## Fillers

carbon fibres, PTFE, graphite

## Main features

- very good chemical resistance
- good heat deflection temperature
- very good slide and wear properties
- inherent flame retardant
- high dimensional stability
- high stiffness
- high creep resistance

## Target Industries

- mechanical engineering
- vacuum technology
- automotive industry
- aircraft and aerospace technology
- conveyor technology
- textile industry
- precision engineering

| Mechanical properties                 | parameter                | value                              | unit                             | norm                 | comment                                                                                                                                                                                            |
|---------------------------------------|--------------------------|------------------------------------|----------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modulus of elasticity (tensile test)  | 1mm/min                  | 4600                               | MPa                              | DIN EN ISO 527-2     | 1) (1) For tensile test: specimen type 1b                                                                                                                                                          |
| Tensile strength                      | 50mm/min                 | 53                                 | MPa                              | DIN EN ISO 527-2     | (2) For flexural test: support span 64mm, norm specimen.                                                                                                                                           |
| Tensile strength at yield             | 50mm/min                 | 53                                 | MPa                              | DIN EN ISO 527-2     | (3) Specimen 10x10x10mm                                                                                                                                                                            |
| Elongation at yield                   | 50mm/min                 | 2                                  | %                                | DIN EN ISO 527-2     | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.                                                                                                                             |
| Elongation at break                   | 50mm/min                 | 2                                  | %                                | DIN EN ISO 527-2     | (5) For Charpy test: support span 64mm, norm specimen.                                                                                                                                             |
| Flexural strength                     | 2mm/min, 10 N            | 91                                 | MPa                              | DIN EN ISO 178       | (2) (6) Specimen in 4mm thickness                                                                                                                                                                  |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N            | 4800                               | MPa                              | DIN EN ISO 178       |                                                                                                                                                                                                    |
| Compression strength                  | 1% / 2%<br>5mm/min, 10 N | 19 / 36                            | MPa                              | EN ISO 604           | 3)                                                                                                                                                                                                 |
| Compression modulus                   | 5mm/min, 10 N            | 3300                               | MPa                              | EN ISO 604           | 4)                                                                                                                                                                                                 |
| Impact strength (Charpy)              | max. 7,5J                | 14                                 | kJ/m <sup>2</sup>                | DIN EN ISO 179-1eU   | 5)                                                                                                                                                                                                 |
| Ball indentation hardness             |                          | 238                                | MPa                              | ISO 2039-1           | 6)                                                                                                                                                                                                 |
| Thermal properties                    | parameter                | value                              | unit                             | norm                 | comment                                                                                                                                                                                            |
| Glass transition temperature          |                          | 94                                 | °C                               | DIN 53765            | 1) (1) Found in public sources.                                                                                                                                                                    |
| Melting temperature                   |                          | 281                                | °C                               | DIN 53765            | (2) Found in public sources.                                                                                                                                                                       |
| Service temperature                   | short term               | 260                                | °C                               |                      | 2) Individual testing regarding application conditions is mandatory.                                                                                                                               |
| Service temperature                   | long term                | 230                                | °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.          | 6                                  | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |                                                                                                                                                                                                    |
| Thermal expansion (CLTE)              | 100-150°C, long.         | 13                                 | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |                                                                                                                                                                                                    |
| Specific heat                         |                          | 0.9                                | J/(g*K)                          | ISO 22007-4:2008     |                                                                                                                                                                                                    |
| Thermal conductivity                  |                          | 0.58                               | W/(K*m)                          | ISO 22007-4:2008     |                                                                                                                                                                                                    |
| Electrical properties                 | parameter                | value                              | unit                             | norm                 | comment                                                                                                                                                                                            |
| Specific surface resistance           |                          | 10 <sup>4</sup> - 10 <sup>10</sup> | Ω                                | DIN EN 61340-2-3     |                                                                                                                                                                                                    |
| Specific volume resistance            |                          | 10 <sup>7</sup> - 10 <sup>12</sup> | Ω*cm                             | DIN EN 61340-2-3     |                                                                                                                                                                                                    |
| Other properties                      | parameter                | value                              | unit                             | norm                 | comment                                                                                                                                                                                            |
| Water absorption                      | 24h / 96h (23°C)         | <0.01 / <0.01                      | %                                | DIN EN ISO 62        | 1) (1) Ø ca. 50mm, h=13mm                                                                                                                                                                          |
| Resistance to hot water/ bases        |                          | +                                  | -                                |                      | 2) (+) limited resistance                                                                                                                                                                          |
| Resistance to weathering              |                          | (+)                                | -                                |                      | 3) (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. |
| Flammability (UL94)                   | corresponding to         | V0                                 |                                  | DIN IEC 60695-11-10; | 4)                                                                                                                                                                                                 |

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