

## TECATRON PVX black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PPS (Polyphenylsulfide)

### 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
- oil and gas industry
- vacuum technology
- automotive industry
- aircraft and aerospace technology

| Mechanical properties                 | parameter                     | value                              | unit                             | norm                 | comment                                                                |
|---------------------------------------|-------------------------------|------------------------------------|----------------------------------|----------------------|------------------------------------------------------------------------|
| Tensile strength                      | 50mm/min                      | 53                                 | MPa                              | DIN EN ISO 527-2     | (1) For tensile test: specimen type 1b                                 |
| Modulus of elasticity (tensile test)  | 1mm/min                       | 4600                               | 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 (tensile test)    | 50mm/min                      | 2                                  | %                                | DIN EN ISO 527-2     | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. |
| Elongation at break (tensile test)    | 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)                                                                     |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N                 | 4800                               | MPa                              | DIN EN ISO 178       |                                                                        |
| Compression strength                  | 1% / 2% / 5%<br>5mm/min, 10 N | 19/36/89                           | 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)                                                                     |
| Shore hardness                        | D                             | 85                                 |                                  | DIN EN ISO 868       |                                                                        |
| Thermal properties                    | parameter                     | value                              | unit                             | norm                 | comment                                                                |
| Glass transition temperature          |                               | 94                                 | °C                               | DIN EN ISO 11357     | 1)                                                                     |
| Melting temperature                   |                               | 281                                | °C                               | DIN EN ISO 11357     |                                                                        |
| Service temperature                   | short term                    | 260                                | °C                               |                      | 2)                                                                     |
| 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                                                                |
| surface resistivity                   |                               | 10 <sup>4</sup> - 10 <sup>10</sup> | Ω                                | DIN EN 61340-2-3     |                                                                        |
| volume resistivity                    |                               | 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)                                                                     |
| Resistance to hot water/ bases        |                               | +                                  |                                  | -                    | 2)                                                                     |
| Resistance to weathering              |                               | (+)                                |                                  | -                    | 3)                                                                     |
| Flammability (UL94)                   | corresponding to              | V0                                 |                                  | DIN IEC 60695-11-10; | 4)                                                                     |

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