

VICTREX® PEEK 90CA30

➤ Product Description:

High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding, very easy flow, FDA food contact compliant, colour black.

➤ Typical Application Areas:

Complex geometries with thinner cross sections or longer flow length where higher strength in a static or dynamic system is required. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

➤ Material Properties

| | CONDITIONS | TEST METHOD | UNITS | TYPICAL VALUE |
|----------------------------------|---------------------|-------------|--------------------------------------|---------------|
| Mechanical Data | | | | |
| Tensile Strength | Break, 23°C | ISO 527 | MPa | 260 |
| | Break, 125°C | | | 180 |
| | Break, 175°C | | | 110 |
| | Break, 225°C | | | 85 |
| | Break, 275°C | | | 65 |
| Tensile Elongation | Break, 23°C | ISO 527 | % | 1.3 |
| Tensile Modulus | 23°C | ISO 527 | GPa | 27 |
| Flexural Strength | 23°C | ISO 178 | MPa | 360 |
| | 125°C | | | 250 * |
| | 175°C | | | 120 * |
| Flexural Modulus | 23°C | ISO 178 | GPa | 24 |
| | 225°C | | | 60 * |
| Compressive Strength | 23°C | ISO 604 | MPa | 300 * |
| | 120°C | | | 200 * |
| | 200°C | | | 70 * |
| Charpy Impact Strength | Notched, 23°C | ISO 179/1eA | kJ m ⁻² | 6.0 |
| | Unnotched, 23°C | ISO 179/1U | | 45 |
| Izod Impact Strength | Notched, 23°C | ISO 180/A | kJ m ⁻² | 6.5 |
| | Unnotched, 23°C | ISO 180/U | | 40 |
| Thermal Data | | | | |
| Melting Point | | ISO 11357 | °C | 343 |
| Glass Transition (Tg) | Onset | ISO 11357 | °C | 143 |
| Specific Heat Capacity | 23°C | DSC | kJ kg ⁻¹ °C ⁻¹ | 1.8 |
| Coefficient of Thermal Expansion | Along flow below Tg | ISO 11359 | ppm K ⁻¹ | 5 |
| | Average below Tg | | | 40 |
| | Along flow above Tg | | | 5 |
| | Average above Tg | | | 90 |
| Heat Deflection Temperature | 1.8 MPa | ISO 75A-f | °C | 342 |
| Thermal Conductivity | 23°C | ISO 22007-4 | W m ⁻¹ K ⁻¹ | 0.95 |
| Flow | | | | |
| Melt Viscosity | 400°C | ISO 11443 | Pa.s | 260 |

| Miscellaneous | | | | |
|--|-------------------|----------|--------------------|------|
| Density | Crystalline | ISO 1183 | g cm ⁻³ | 1.40 |
| Shore D hardness | 23°C | ISO 868 | 87.5 | 88 |
| Water Absorption (3.2mm thick Tensile bar) | 24h, 23°C | ISO 62-1 | % | 0.04 |
| (by immersion) | Equilibrium, 23°C | | | 0.3 |

| Electrical Properties | | | | |
|-----------------------|----------|------------|------|-----------------|
| Volume Resistivity | 23°C, 1V | ASTM D4496 | Ω cm | 10 ⁵ |

| Fire Smoke Toxicity | | | | |
|---------------------|-------------------------|----------------|-----|--------|
| Glow Wire Test | 2mm thickness | IEC 60695-2-12 | °C | 960 * |
| Toxicity Index | CO content | NES 713 | n/a | 0.05 * |
| | CO ₂ content | | | 0.12 * |
| | Total gases | | | 0.17 * |

* Result based on similar products

| Recommended Processing Conditions | |
|-----------------------------------|--|
| Drying Temperature / Time | 150°C / 3h or 120°C / 5h |
| Temperature settings | 360 / 365 / 370 / 375 / 380°C (Nozzle) |
| Hopper Temperature | Not greater than 100°C |
| Mould Temperature | 170°C - 200°C (max 250°C) |
| Runner | Die / nozzle >3mm, manifold >3.5mm |
| Gate | >2mm or 0.5 x part thickness |

| Mould Shrinkage and Spiral Flow | | | | | |
|---------------------------------|--------------------------|-------------------|-----------|----|-----|
| Spiral Flow | 380°C nozzle, 190°C tool | 1mm thick section | Victrex | mm | 130 |
| Mould Shrinkage | 380°C nozzle, 190°C tool | Along flow | ISO 294-4 | % | 0.1 |
| | | Across flow | | | 0.5 |

Important note:

Data are generated in accordance with prevailing national, international and internal standards, and should be used for material comparison. Actual property values are highly dependent on part geometry, mould configuration and processing conditions. Properties may also differ for along flow and across flow directions

Detailed data available on our website www.victrex.com or upon request

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