

VICTREX® PEEK 650GL30

➤ Product Description:

High performance thermoplastic material, 30% glass fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, low flow, colour natural/beige.

➤ Typical Application Areas:

Applications for higher strength in a static system. Low coefficient of thermal expansion. Chemically resistant to aggressive environments, suitable for sterilisation for medical and food contact applications.

➤ Material Properties

| | CONDITIONS | TEST METHOD | UNITS | TYPICAL VALUE |
|----------------------------------|---------------------|-------------|-----------------------------------|---------------|
| Mechanical Data | | | | |
| Tensile Strength | Break, 23°C | ISO 527 | MPa | 170 |
| | Break, 125°C | | | 95 |
| | Break, 175°C | | | 50 |
| | Break, 275°C | | | 30 |
| Tensile Elongation | Break, 23°C | ISO 527 | % | 2.9 |
| Tensile Modulus | 23°C | ISO 527 | GPa | 11.5 |
| Flexural Strength | 23°C | ISO 178 | MPa | 260 |
| | 125°C | | | 170 |
| | 175°C | | | 75 |
| | 275°C | | | 45 |
| Flexural Modulus | 23°C | ISO 178 | GPa | 10.0 |
| Compressive Strength | 23°C | ISO 604 | MPa | 190 |
| | 120°C | | | 120 |
| | 200°C | | | 35 |
| Charpy Impact Strength | Notched, 23°C | ISO 179/1eA | kJ m ⁻² | 12 |
| | Unnotched, 23°C | ISO 179/1U | | 70 |
| Izod Impact Strength | Notched, 23°C | ISO 180/A | kJ m ⁻² | 12 |
| | Unnotched, 23°C | ISO 180/U | | 65 |
| Thermal Data | | | | |
| Melting Point | | ISO 11357 | °C | 343 |
| Glass Transition (Tg) | Onset | ISO 11357 | °C | 143 |
| | Midpoint | | | 150 |
| Coefficient of Thermal Expansion | Along flow below Tg | ISO 11359 | ppm K ⁻¹ | 18 |
| | Average below Tg | | | 45 |
| | Along flow above Tg | | | 22 |
| | Average above Tg | | | 120 |
| Heat Deflection Temperature | 1.8 MPa | ISO 75-f | °C | 320 |
| Thermal Conductivity | Along flow, 23°C | ISO 22007-4 | W m ⁻¹ K ⁻¹ | 0.35 |
| | Average, 23°C | | | 0.30 |
| Flow | | | | |
| Melt Viscosity | 420°C | ISO 11443 | Pa.s | 700 |

| Miscellaneous | | | | |
|-------------------------------|-------------------|-------------|---------------------|------------------|
| Density | Crystalline | ISO 1183 | g cm ⁻³ | 1.51 |
| Water Absorption by immersion | Saturation, 23°C | ISO 62-1 | % | 0.3 * |
| | Saturation, 100°C | | | 0.45 * |
| Electrical Properties | | | | |
| Dielectric Strength | 2.5mm thickness | IEC 60243-1 | kV mm ⁻¹ | 20 |
| Comparative Tracking Index | | IEC 60112 | V | 150 |
| Loss Tangent | 23°C, 1 MHz | IEC 60250 | n/a | 0.004 |
| Dielectric Constant | 23°C, 1 kHz | IEC 60250 | n/a | 3.5 |
| Volume Resistivity | 23°C | IEC 60093 | Ω cm | 10 ¹⁶ |

* Result based on similar products

| Typical Processing Conditions | |
|-------------------------------|--|
| Drying Temperature / Time | 150°C / 3h or 120°C / 5h |
| Temperature settings | 385 / 390 / 395 / 400 / 405°C (Nozzle) |
| Hopper Temperature | Not greater than 100°C |
| Mould Temperature | 180°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 | 405°C nozzle, 190°C tool | 1mm thick section | Victrex | mm | 90 |
| | | 3mm thick section | | | 450 |
| Mould Shrinkage | 405°C nozzle, 190°C tool | Along flow | ISO 294-4 | % | 0.3 |
| | | Across flow | | | 0.8 |

Important notes:

- Processing conditions quoted in our datasheets are typical of those used in our processing laboratories
Data for mould shrinkage should be used for material comparison. Actual mould shrinkage values are highly dependent on part geometry, mould configuration, and processing conditions.
Mould shrinkage differs for along flow and across flow directions. "Along flow" direction is taken as the direction the molten material is travelling when it exits the gate and enters the mould.
Mould shrinkage is expressed as a percent change in dimension of a specimen in relation to mould dimensions.
- 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

VICTREX PLC BELIEVES THAT THE INFORMATION CONTAINED IN THIS BROCHURE IS AN ACCURATE DESCRIPTION OF THE TYPICAL CHARACTERISTICS AND/OR USES OF THE PRODUCT OR PRODUCTS, BUT IT IS THE CUSTOMER'S RESPONSIBILITY TO THOROUGHLY TEST THE PRODUCT IN EACH SPECIFIC APPLICATION TO DETERMINE ITS PERFORMANCE, EFFICACY AND SAFETY FOR EACH END-USE PRODUCT, DEVICE OR OTHER APPLICATION. SUGGESTIONS OF USES SHOULD NOT BE TAKEN AS INDUCEMENTS TO INFRINGE ANY PARTICULAR PATENT. THE INFORMATION AND DATA CONTAINED HEREIN ARE BASED ON INFORMATION WE BELIEVE RELIABLE. MENTION OF A PRODUCT IN THIS DOCUMENTATION IS NOT A GUARANTEE OF AVAILABILITY. VICTREX PLC RESERVES THE RIGHT TO MODIFY PRODUCTS, SPECIFICATIONS AND/OR PACKAGING AS PART OF A CONTINUOUS PROGRAM OF PRODUCT DEVELOPMENT. VICTREX® IS A REGISTERED TRADEMARK OF VICTREX MANUFACTURING LIMITED. VICTREX PIPES™ IS A TRADEMARK OF VICTREX MANUFACTURING LIMITED. PEEK-ESD™, HT™, ST™ AND WG™ ARE TRADEMARKS OF VICTREX PLC. VICOTE® AND APTIV® ARE REGISTERED TRADEMARKS OF VICTREX PLC.

VICTREX PLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR OF INTELLECTUAL PROPERTY NON-INFRINGEMENT, INCLUDING, BUT NOT LIMITED TO PATENT NON-INFRINGEMENT, WHICH ARE EXPRESSLY DISCLAIMED, WHETHER EXPRESS OR IMPLIED, IN FACT OR BY LAW. FURTHER, VICTREX PLC MAKES NO WARRANTY TO YOUR CUSTOMERS OR AGENTS, AND HAS NOT AUTHORIZED ANYONE TO MAKE ANY REPRESENTATION OR WARRANTY OTHER THAN AS PROVIDED ABOVE. VICTREX PLC SHALL IN NO EVENT BE LIABLE FOR ANY GENERAL, INDIRECT, SPECIAL, CONSEQUENTIAL, PUNITIVE, INCIDENTAL OR SIMILAR DAMAGES, INCLUDING WITHOUT LIMITATION, DAMAGES FOR HARM TO BUSINESS, LOST PROFITS OR LOST SAVINGS, EVEN IF VICTREX HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, REGARDLESS OF THE FORM OF ACTION.