# Victrex® PEEK -HT™ G22 PolyEtherKetone, Unreinforced

**Category :** Polymer , Thermoplastic , Polyketone

**Material Notes:**

Product Description:High performance thermoplastic material, unreinforced PolyEtherKetone (PEK), semi crystalline, depth filtered granules for injection moulding, easy flow, FDA food contact compliant, colour natural/beige.Typical Application Areas:Applications for high strength and stiffness as well as good ductility at higher temperatures. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications.Information Provided by VICTREX®

Order this product through the following link:
http://www.lookpolymers.com/polymer_Victrex-PEEK-HT-G22-PolyEtherKetone-Unreinforced.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.30 g/cc | 0.0470 lb/in³ | Crystalline; ISO 1183 |
| Water Absorption at Saturation | 0.60 %<br>@Temperature 23.0 °C | 0.60 %<br>@Temperature 73.4 °F | Equilibrium; by immersion; ISO 62-1 |
| | 0.75 %<br>@Temperature 100 °C | 0.75 %<br>@Temperature 212 °F | immersion; ISO 62-1 |
| Viscosity | 200000 cP<br>@Temperature 400 °C | 200000 cP<br>@Temperature 752 °F | melt; ISO 11443 |
| Linear Mold Shrinkage, Flow | 0.010 cm/cm | 0.010 in/in | 360°C nozzle, 160°C tool; ISO 294-4 |
| Linear Mold Shrinkage, Transverse | 0.012 cm/cm | 0.012 in/in | 395°C nozzle, 200°C tool; ISO 294-4 |
| Spiral Flow | 20.0 cm<br>@Thickness 1.00 mm | 7.87 in<br>@Thickness 0.0394 in | 395°C nozzle, 200°C tool |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Hardness, Shore D | 86<br>@Temperature 23.0 °C | 86<br>@Temperature 73.4 °F | ISO 868 |
| Tensile Strength, Yield | 115 MPa<br>@Temperature 23.0 °C | 16700 psi<br>@Temperature 73.4 °F | ISO 527 |
| Elongation at Break | 25 %<br>@Temperature 23.0 °C | 25 %<br>@Temperature 73.4 °F | ISO 527 |
| Tensile Modulus | 4.30 GPa<br>@Temperature 23.0 °C | 624 ksi<br>@Temperature 73.4 °F | ISO 527 |
| | 16.0 MPa | 2320 psi | |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Flexural Strength | @Temperature 275 °C | @Temperature 527 °F | ISO 178 |
| | 32.0 MPa<br>@Temperature 175 °C | 4640 psi<br>@Temperature 347 °F | ISO 178 |
| | 105 MPa<br>@Temperature 125 °C | 15200 psi<br>@Temperature 257 °F | ISO 178 |
| | 180 MPa<br>@Temperature 23.0 °C | 26100 psi<br>@Temperature 73.4 °F | ISO 178 |
| | 130 MPa<br>@Strain 3.50 %, Temperature 23.0 °C | 18900 psi<br>@Strain 3.50 %, Temperature 73.4 °F | ISO 178 |
| Flexural Modulus | 4.00 GPa<br>@Temperature 23.0 °C | 580 ksi<br>@Temperature 73.4 °F | ISO 178 |
| Compressive Strength | 30.0 MPa<br>@Temperature 200 °C | 4350 psi<br>@Temperature 392 °F | ISO 604 |
| | 90.0 MPa<br>@Temperature 120 °C | 13100 psi<br>@Temperature 248 °F | ISO 604 |
| | 140 MPa<br>@Temperature 23.0 °C | 20300 psi<br>@Temperature 73.4 °F | ISO 604 |
| Izod Impact, Notched (ISO) | 5.50 kJ/m²<br>@Temperature 23.0 °C | 2.62 ft-lb/in²<br>@Temperature 73.4 °F | ISO 180/A |
| Izod Impact, Unnotched (ISO) | NB<br>@Temperature 23.0 °C | NB<br>@Temperature 73.4 °F | ISO 180/U |
| Charpy Impact Unnotched | NB<br>@Temperature 23.0 °C | NB<br>@Temperature 73.4 °F | ISO 180/U |
| Charpy Impact, Notched | 0.380 J/cm²<br>@Temperature 23.0 °C | 1.81 ft-lb/in²<br>@Temperature 73.4 °F | ISO 179/1eA |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear | 55.0 µm/m-°C<br>@Temperature <=152 °C | 30.6 µin/in-°F<br>@Temperature <=306 °F | Average below Tg; ISO 11359 |
| | 130 µm/m-°C | 72.2 µin/in-°F | Average above Tg; ISO 11359 |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| | @Temperature >=152 °C | @Temperature >=306 °F | |
| CTE, linear, Parallel to Flow | 45.0 µm/m-°C<br>@Temperature <=152 °C | 25.0 µin/in-°F<br>@Temperature <=306 °F | Below Tg; ISO 11359 |
| | 75.0 µm/m-°C<br>@Temperature >=152 °C | 41.7 µin/in-°F<br>@Temperature >=306 °F | Above Tg; ISO 11359 |
| Thermal Conductivity | 0.290 W/m-K<br>@Temperature 23.0 °C | 2.01 BTU-in/hr-ft²-°F<br>@Temperature 73.4 °F | Average; ISO/CD 22007-4 |
| | 0.320 W/m-K<br>@Temperature 23.0 °C | 2.22 BTU-in/hr-ft²-°F<br>@Temperature 73.4 °F | Along flow; ISO 22007-4 |
| Melting Point | 373 °C | 703 °F | ISO 11357 |
| Deflection Temperature at 1.8 MPa (264 psi) | 163 °C | 325 °F | ISO 75-f |
| Glass Transition Temp, Tg | 152 °C | 306 °F | Onset; ISO 11357 |
| | 160 °C | 320 °F | Midpoint; ISO 11357 |
| Oxygen Index | 24 %<br>@Thickness 0.400 mm | 24 %<br>@Thickness 0.0157 in | ISO 4239 |
| | 35 %<br>@Thickness 3.20 mm | 35 %<br>@Thickness 0.126 in | ISO 4239 |
| Glow Wire Test | 960 °C<br>@Thickness 2.00 mm | 1760 °F<br>@Thickness 0.0787 in | IEC 60695-2-12 |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Volume Resistivity | 1.00e+9 ohm-cm<br>@Temperature 275 °C | 1.00e+9 ohm-cm<br>@Temperature 527 °F | IEC 60093 |
| | 1.00e+15 ohm-cm<br>@Temperature 125 °C | 1.00e+15 ohm-cm<br>@Temperature 257 °F | IEC 60093 |
| | 1.00e+16 ohm-cm<br>@Temperature 23.0 °C | 1.00e+16 ohm-cm<br>@Temperature 73.4 °F | IEC 60093 |
| Dielectric Strength | 23.0 kV/mm<br>@Thickness 2.00 mm | 584 kV/in<br>@Thickness 0.0787 in | IEC 60243-1 |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Comparative Tracking Index | 150 V | 150 V | IEC 60112 |

| Processing Properties | Metric | English | Comments |
|---|---|---|---|
| Processing Temperature | <= 100 °C | <= 212 °F | Hopper Temperature |
| Nozzle Temperature | 395 °C | 743 °F | |
| Mold Temperature | 190 - 215 °C | 374 - 419 °F | |
| Drying Temperature | 120 °C<br>@Time 18000 sec | 248 °F<br>@Time 5.00 hour | |
| | 150 °C<br>@Time 10800 sec | 302 °F<br>@Time 3.00 hour | |

| Descriptive Properties | Value | Comments |
|---|---|---|
| Toxicity Index | 0.074 | NES 713; CO content |
| | 0.15 | NES 713; CO<sub>2</sub> content |
| | 0.22 | NES 713; Total gases |

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