Material of choice...

VICTREX® PEEK polymer offers a unique combination of properties that can greatly enhance the performance of electronic components.

Victrex is an innovative world leader in high performance materials whose team of dedicated market development, sales, and technical support professionals has a long history — over 30 years — of working hand-in-hand with electronics customers around the world assisting them with new application development, together with product performance data and processing support.

Material selection is critical to today’s electronic components. Demands for higher performance, portability, wireless/high frequency, and longer life, as well as concerns about the environment, are all shaping the way electronic parts are designed. Because material selection is a critical component of the design process, end users are specifying VICTREX PEEK polymer to improve part performance, exploit greater design freedom, create a differentiated application, and reduce systems costs.
VICTREX® PEEK high performance polymers for the Electronics Industry

- Mobile phones
- Circuit boards
- Printers
- LEDs
- Connectors
- Batteries
- HDD (Hard disk drives)
- Computers
- Switches
Advantages

VICTREX PEEK polymer is a high performance thermoplastic whose unique combination of properties can be customized to meet the growing demands of the electronics industry. These include:

▲ High Temperature Resistance
   Has a heat resistance of up to 315°C (600°F). Maintains strength and dimensional stability with the increased temperatures associated with lead-free solder systems. No deformation following reflow at 250°-280°C (482-536°F) for 5-10 seconds.

▲ Wear Resistance
   High mechanical strength and abrasion resistance.

▲ Dimensional Stability
   Filled materials reduce coefficient of thermal expansion (CTE) and increase heat distortion temperature (HDT). Maintains tight dimensional control.

▲ Low Outgassing
   Reduced contamination improves component reliability in applications requiring purity (HDD, wafer cassettes, etc.)

▲ Low Moisture Absorption
   Important in maintaining dimensional stability and insulation properties.

▲ Eco-Compliant (Green) FR Systems
   Naturally flame retardant without the need for additives (halogens, bromines, etc.).

▲ Chemical Resistance
   Outstanding resistance to a wide range of chemical and corrosive environments even at elevated temperatures up to 200°C (392°F).

▲ Low Particle Generation
   Ensures uncompromised component functionality and reliability. Important when components are sensitive to any particulate shedding which could impact component performance.

▲ Fully Recyclable
   Unlike numerous epoxy systems, VICTREX PEEK polymer is fully recyclable, providing environmental and regulatory benefits as well as aftermarket cost efficiency.

▲ Processing Flexibility
   Easily processed using conventional equipment.

<table>
<thead>
<tr>
<th>COMPARISON OF THERMOPLASTIC POLYMERS - ELECTRONICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Specific Gravity</td>
</tr>
<tr>
<td>Melting Point ºC</td>
</tr>
<tr>
<td>Processing Temp ºC</td>
</tr>
<tr>
<td>Heat Deflection Temp ºC 1.8 MPa</td>
</tr>
<tr>
<td>Flexural Modulus (MPa)</td>
</tr>
<tr>
<td>Tensile Strength (MPa)</td>
</tr>
<tr>
<td>Chemical resistance</td>
</tr>
</tbody>
</table>

VICTREX® PEEK high performance polymers for the Electronics Industry
VICTREX PEEK polymer is helping mobile handset manufacturers to optimize their product designs and reduce their manufacturing costs. Because of the polymer’s ability to maintain its mechanical properties while being injection molded, VICTREX PEEK polymer can be mass produced in a virtually limitless number of complex and intricate designs. It can even be processed into a plate that’s just 0.2 mm thick.

When used to replace metal, VICTREX PEEK polymer reduces the weight of components — a critical benefit for today’s sophisticated handset designs. And, in terms of torque retention, VICTREX PEEK polymer performs better than metal. A significant advantage of using VICTREX PEEK polymer is its superior processability which makes it a very cost-effective material solution for electronic components.

**Key benefits**

- Able to pass lead-free solder process at 250-280°C (482-536°F) for 5-10 seconds for multiple cycles
- Thin wall — able to fill the part thickness down to 0.1-0.2mm
- Significantly greater design flexibility compared with metal injection molded (MIM) parts
- Light weight

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**Laser Printers**

Today’s laser printers are required to provide multi-functionality, higher speed and better-quality images. To meet these requirements, engineers need to work on more demanding designs in which materials deliver high heat resistance and exceptional mechanical strength, as well as higher wear and torque resistance. VICTREX PEEK polymer provides a material solution for these increasingly stringent requirements, especially the ones for the fusing section of the laser printers. The ability of VICTREX PEEK polymer to maintain mechanical properties at high temperatures makes it an excellent material candidate for a variety of parts including heat roller gears, guide claws, bushings, etc.

**Key benefits**

- Continuous-use temperature up to 260°C (500°F)
- Superior wear resistance at high temperature, 120-240°C (248-464°F)
- High torque resistance at high temperature
- High melting point, 374°C (705°F) of VICTREX PEEK-HT. Able to survive the PFA coating processing temperature of 330-360°C (626-680°F)
- Low coefficient of friction

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**Audio Speakers**

Designers of speaker components rely on high temperature resistant materials to improve the overall power capacity of components such as spiders, acoustic diaphragms, coils, and front suspensions. These components are required to have outstanding heat resistance because a high percentage of electrical power delivered by a speaker’s amplifier is dissipated in the form of heat. VICTREX PEEK polymer provides a high melt temperature and a continuous operating temperature of up to 260°C (500°F). The polymer’s high strength and heat resistance enables components to withstand significant displacement. VICTREX PEEK polymer film can be used to provide better acoustic performance.

This performance combination, coupled with the polymer’s inherent ease of processing can simplify the manufacturing process and improve productivity.

**Key benefits**

- Heat resistance — continuous-use temperature up to 260°C (500°F)
- Superior acoustic quality
- Better processability vs. PI
- Chemical resistance
- Fatigue resistance