



HIGH PERFORMANCE PEEK POLYMERS

The drive towards multi-functional, high speed, color printing/copying devices has revolutionized the printer/copier market and fueled manufacturers' demands for robust, flexible, high-performance materials. VICTREX PEEK polymer is a high performance thermoplastic with a unique combination of properties. It can withstand continuous operating temperatures of up to 260°C (500°F), and delivers exceptional mechanical strength and higher wear and torque resistance.

KEY FEATURES

- **Outstanding Thermal Performance** — excellent dimensional stability and tolerance control across a broad range of temperature and humidity conditions. Heat resistance up to 260°C (500°F) — highest of all thermoplastics. Essential for the fusing section of laser printers.
- **Excellent Mechanical Properties** — maintains impact strength, stiffness, and minimum levels of creep. Unfilled grades have a tensile strength of 16,000 psi; carbon filled grades have a tensile strength of 33,800 psi.
- **Wear Resistance Without Lubrication** — outstanding wear resistance coupled with a low coefficient of friction— essential in key printer parts such as bushings and gears.
- **Chemical Resistance** —insoluble in all common solvents. Has excellent resistance to acids, bases, salts and steam.
- **Ease of Processing** — processing flexibility makes it ideal for use in a wide variety of applications.

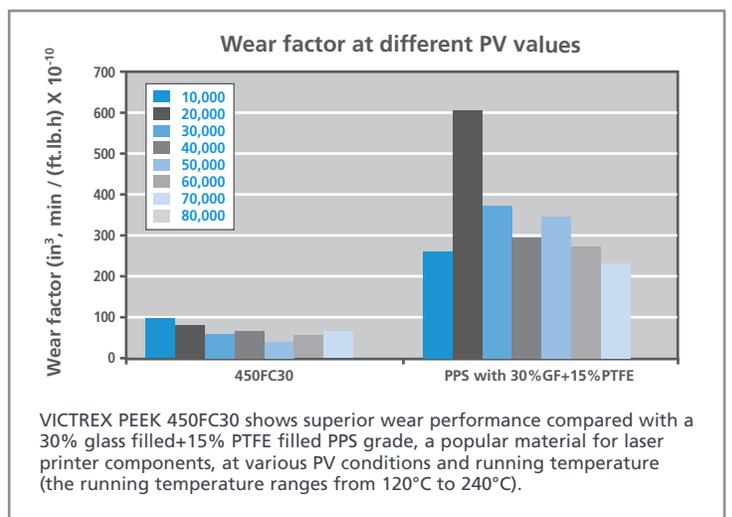
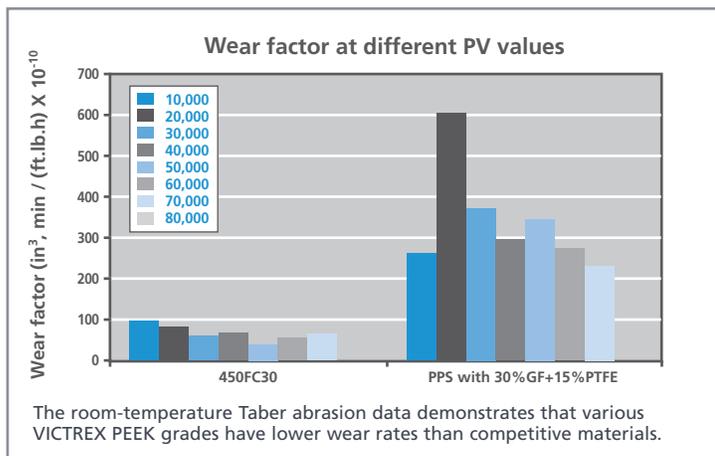


APPLICATIONS

Gears

Copier and printer speeds have increased significantly in recent years, placing harsh demands on structural components such as fuser roller gears. For years, the material of choice for gears in low-speed copiers was POM (polyacetal), and for medium to high-speed copiers was PPS (polyphenylene sulfide). However, the excessively high torque caused by today's higher speeds can result in severe wear, and even cracking within a short period of time.

VICTREX PEEK polymer delivers exceptional wear resistance and fatigue characteristics, making it the ideal material for gears and other sliding parts. It can withstand continuous operating temperatures of up to 260°C (500°F). The polymer's excellent mechanical strength, toughness and outstanding wear performance at both room and elevated temperatures make it possible to extend the service life of high speed copiers and reduce maintenance costs.



For Printers and Copiers



SPLIT FINGERS

An important part of any printer/copier is the claw-shaped split finger that is used to separate the copy paper from the copy roller and fuser roller. It must exhibit excellent thermal resistance and non-adhesion to toner. Historically, the front tip of the split finger was coated with a fluoropolymer to prevent toner from adhering to it. Two types of fluoropolymer were used — PTFE and PFA — with PFA coatings more common for color copiers. With a melting point of 374°C (705°F), VICTREX HT™ exceeds the coating conditions [330-360°C (626-680°F)] required for PFA. Unlike polyamide resins or other similar materials, VICTREX HT requires no annealing after processing



BUSHINGS

The quality of fuser roller bushings in printer/copier applications has a direct impact on speed. Bushings must have excellent dimensional precision and must deliver superior sliding performance in high temperatures [approximately 200°C (392°F)] in non-lubricated conditions. When compared to other materials, VICTREX PEEK polymer maintains high thermal performance while exhibiting extremely low wear during sliding. Bushings made from VICTREX PEEK polymer are able to sustain operational temperatures up to 260°C (500°F) and pressures of 18-25 kg/cm² (256-355 psi) while still delivering a low coefficient of friction.

FUSER ROLLERS

Historically, fluoropolymer coatings were used for high-speed mono-color fuser rollers. They have a tendency, however, to wear out and flake. VICTREX PEEK-based VICOTE® Coatings provide superior abrasion resistance, durability and good adhesion. Available in electrostatic powder and liquid dispersion grades, VICOTE Coatings deliver high heat resistance, low particle generation, exceptional wear resistance and wear performance at both room and elevated temperatures.

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