Title: A Comparison Between Engineered Polymer PEEK and Metal. Why is Plastic Better?

Abstract: Polyether-ether-ketone (PEEK) is a high-performance engineered polymer that has one of the highest strength-to-weight ratios of any thermoplastic, and has excellent heat tolerance. PEEK can be used as an alternative to other materials, including glass, steel, aluminum, and other polymers. The material's strength is complemented by its high purity and lubricity for challenging applications. This rigid plastic is considered one of the world's highest performing materials of its kind. PEEK's significant advantages as a material science solution are creating new breakthroughs in many different markets. Many metal parts are being replaced by PEEK, enabling applications to have maximum design innovation with flexibility, while minimizing weight and costs for systems. In analytical applications, the purity, high burst pressure, and chemical resistance of PEEK ensure that PEEK tubing has the ability to withstand the pressures required for critical lab work without contaminating the results. In a biomedical environment, PEEK can be exposed to sterilization procedures such as autoclaving and gamma irradiation as well as with its biocompatibility to human bodies.
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