Carbon Nanotube-Enhanced PEEK Products Suitable for Medical

Solvay Advanced Polymers, LLC is partnering with Entegris Inc.'s TEGO Polymers unit to develop and market advanced carbon nanotube-enhanced PEEK products suited for a range of emerging applications in the medical industry. Solvay will supply its KetaSpire PEEK resin to Entegris who in turn will sell compounds utilizing its novel carbon nanotube technology (CNT). These compounds are targeted for applications requiring weight reduction, enhanced stiffness and flexibility, thermal management, and static charge dissipation.
Entegris has developed proprietary technology for the uniform dispersion of carbon nanotubes into PEEK and other thermoplastics to create homogeneous blends. This homogeneity is achieved with unique mixing and characterization methods at multiple scales. Unlike other filler materials, such as carbon fiber and carbon powder, carbon nanotubes preserve and maintain the properties of the base polymer. These specialized formulations blend single-walled carbon nanotubes or multi-walled carbon nanotubes with a polymer. The CNT materials provide enhanced strength while preserving flexibility, and uniform electrical and thermal conductivity.

KetaSpire PEEK, one of the industry's most chemically resistant plastics, is also used by Entegris' TEGO Polymers unit to create other carbon-nanotube enhanced compounds. Recently, Quantum Polymers, Newark, Del., introduced an extruded rod and plate made of CNT-filled KetaSpire PEEK. These stock shapes can be used to replace metal parts in semiconductor material handling and chemical cleaning systems in applications such as sockets, gaskets, rings, bushings, bearings, seals, and valves.

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