PEEK (Polyetheretherketone)
The development of PEEK as an implantable biomaterial began in the 1980s, and was driven by the need to find a biocompatible material that had significant strength, but one that was significantly less “rigid,” to reduce the risk of stress shielding. PEEK was first used in spinal applications, as the additional benefit of the material being naturally radiolucent was very advantageous in the field of spinal devices. However, the use of PEEK as implantable material has expanded beyond spinal devices as a result of its versatility.

What types of medical applications use PEEK?
Synthes uses PEEK in a variety of implants, such as patient-specific implants for cranial/craniofacial defects, lumbar and cervical spinal cages and interspinous spacers, and sternal fixation. PEEK has also been used in dental implants, heart valves and stents, and joint prostheses.

What characteristics does PEEK have as a biomaterial?
PEEK offers a set of superior characteristics for biomaterials, including:
- excellent mechanical properties,
- natural radiolucency,
- MRI compatibility,
- lack of toxicity,
- good chemical and sterilization resistance,
- versatile mass production processing ability using plastics technologies,
- and a reproducible, pure and traceable supply route.
