

Highly crosslinked polyethylene for orthopaedics

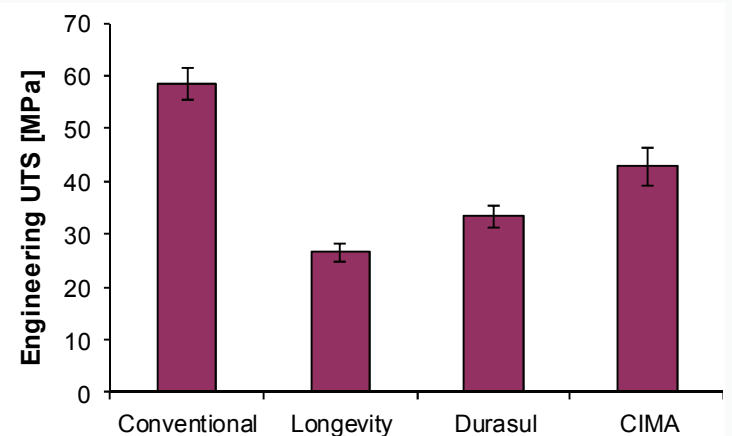
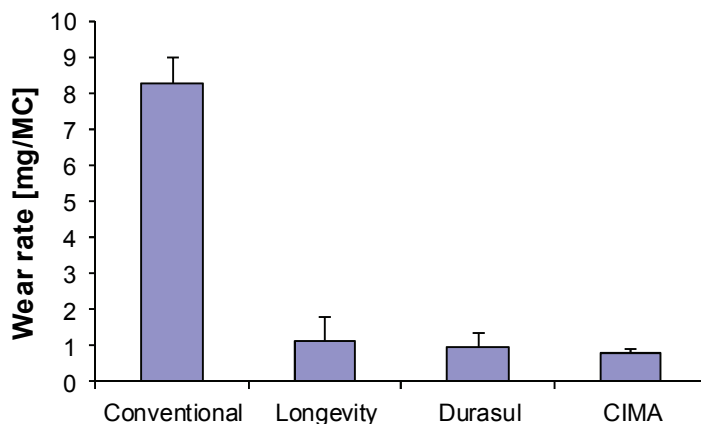
Summary

Highly crosslinked ultra high molecular weight polyethylene (UHMWPE) has been used in hip and knee replacements since 1998. Although very successful, these materials suffer from significant limitations, including lack of resistance to oxidation and reduced mechanical properties. Cambridge Polymer Group has developed two highly crosslinked UHMWPE's that retain their mechanical properties while having good oxidation resistance. These materials will soon be launched internationally.



Description

Developed with the Massachusetts General Hospital, CIMA and E-CIMA exhibit the low wear rates of highly crosslinked and remelted UHMWPE found in first generation materials, but have improved mechanical properties, such as ultimate tensile strength (UTS), over first generation materials. The patented and patent-pending CIMA material (cold-irradiated, mechanically annealed) and E-CIMA (Vitamin E enhanced CIMA) offer low wear, oxidation-resistant materials that can be used for bearing surfaces in hip, knee, shoulder, and spine arthroplasty procedures. These technologies are available for licensing worldwide. Radiation induced crosslinking with subsequent mechanical annealing has been proven to improve the wear resistance while preserving toughness and avoiding the crowded IP field using thermal annealing.



Applications

- Hip arthroplasty
- Knee arthroplasty
- Shoulder arthroplasty
- Total spinal disc



**Cambridge
Polymer Group**

Cambridge Polymer Group, Inc.
56 Roland Street, Suite 310
Boston, MA 02129

Ph: 1 (617) 629 4400
Fax: 1 (617) 629 9100

info@campoly.com
www.campoly.com
ISO 9001:2008 Certified

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