MULTIGRAFT COPOLYMERS AS SUPERELASTOMERS

Abstract

Thermoplastic elastomer compositions are described comprising multigraft copolymers. The multigraft copolymers can comprise a rubbery polymeric backbone and a plurality of glassy polymeric side chains, each attached at one of a plurality of branch points randomly spaced along the backbone. The copolymer materials have high tensile strength, high strain at break, and low residual strain after elongation. The compositions can be used as adhesives and in a wide variety of high tech, medical, and commodity applications.

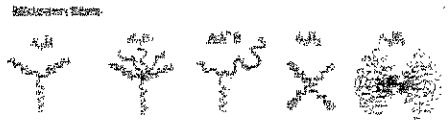


FIG. 1A

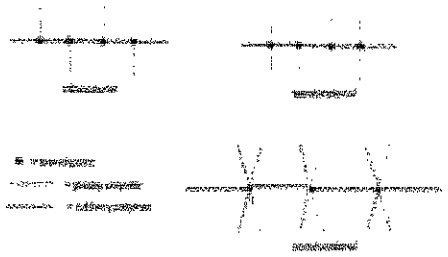


FIG. 1B

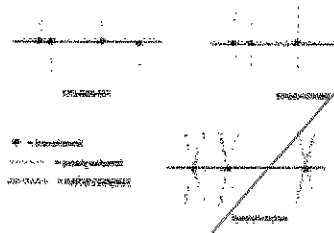


FIG. 1C

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Thermoplastic elastomer compositions are described comprising multigraft copolymers. The multigraft copolymers can comprise a rubbery polymeric backbone and a plurality of glassy polymeric side chains, each attached at one of a plurality of branch points randomly spaced along the backbone. The copolymer materials have high tensile strength, high strain at break, and low residual strain after elongation. The compositions can be used as adhesives and in a wide variety of high tech, medical, and commodity applications.

[no suitable Figure]