United States Patent [19]

Tanaka

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[54] **HIGH TOUGHNESS SYNTHETIC HIGH POLYMERS FOR SOFT CONTACT LENSES AND A PROCESS FOR MANUFACTURING THE SAME**

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[52] **U.S. Cl.** **526/219;** 3/13; 264/1; 264/328; 351/159; 526/218; 526/320

[51] **Int. Cl.²** **C08F 216/02**

[58] **Field of Search** 260/80.75; 526/320, 526/218, 219; 264/1, 328

[56] **References Cited**

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[57] **ABSTRACT**

A process for manufacturing high toughness synthetic high polymers for soft contact lenses comprising the steps of: preparing a five-component solution by adding to a predominant two-components solution of a 2-hydroxyethyl methacrylate monomer and n-amyl methacrylate monomer a vinyl propionate monomer and a vinyl acetate monomer as auxiliary components with further addition of an initiator for polymerization, followed by mixing to provide an intimate mixture or solution; injecting the solution into a mold; preferably closing the mold during heating and copolymerizing of the solution in the mold; and cooling the product, followed by removal thereof from the mold. A synthetic high polymer manufactured according to the process of this invention is high in hydrophilicity, optical performance and machinability, which fulfills the requirements for manufacturing conventional soft contact lens. In addition the synthetic high polymer exhibits tenacious elasticity and, when hydrated and swollen, has no tendency to break or crack, thus being highly suitable as the material for soft contact lens with high durability. Moreover, the synthetic high polymer of this invention can be used for the manufacture of artificial corneas and optical lenses for medical use, and also, when dyed, for the manufacture of artificial eyes and iris contact lenses.

4 Claims, No Drawings