



# United States Patent [19]

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Siepsner et al.

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[54] **HIGH REFRACTIVE INDEX POLYMERIC COMPOSITIONS SUITABLE FOR USE AS EXPANSILE HYDROGEL INTRAOCULAR LENSES**

5,092,884 3/1992 Devereux et al. .... 623/11

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[21] Appl. No.: **615,440**

### [57] ABSTRACT

[22] Filed: **Nov. 16, 1990**

Flexible, crosslinked polymeric compositions providing transparent hydrogels having a refractive index in the dehydrated (dry) state of at least about 1.53 and having equilibrium water content of at least 40% by weight of the polymeric gel for use as an expansile intraocular lenses for surgical implantation. The dehydrated polymeric compositions are capable of hydration by natural fluids present in the eye to expand about 180% after implantation and in the fully swollen state have refractive indices of at least 1.40. They are prepared by polymerizing a multicomponent monomeric mixture consisting essentially of from about 50 to 75% by weight vinyl pyrrolidone, from about 3.25 to 12.5% by weight of 2-hydroxypropyl acrylate, from about 3.25 to 12.5% by weight of 2-hydroxyethyl methacrylate, from about 5 to 35% by weight of acrylamide and as a fifth component a crosslinking agent in an amount of from 1.25 to 15 parts per hundred parts of monomers by weight selected from the group consisting of tetraethylene glycol dimethacrylate and dibromoneopentyl glycol dimethacrylate.

### Related U.S. Application Data

[63] Continuation of Ser. No. 455,087, Dec. 22, 1989, abandoned, which is a continuation of Ser. No. 107,281, Oct. 9, 1987, abandoned.

[51] Int. Cl.<sup>5</sup> ..... **A61F 2/16**

[52] U.S. Cl. .... **623/6; 623/66; 351/160 H; 523/106; 523/108; 524/548; 526/264**

[58] Field of Search ..... **623/6, 66; 351/160 H; 423/206, 108; 524/548; 526/264**

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**5 Claims, No Drawings**