

[54] DIMETHYLACRYLAMIDE-COPOLYMER
HYDROGELS WITH HIGH OXYGEN
PERMEABILITY

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Related U.S. Application Data

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215,101, Jul. 5, 1988, abandoned.

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604/289; 604/890.1; 128/155

[58] Field of Search 351/160 H; 623/6;
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[57] ABSTRACT

The invention describes polymers which are obtained by copolymerization of 15-85 wt % N,N-dimethylacrylamide with about 15-85% of a fluorinated monomer such as perfluoroalkyl-alkylene acrylate or methacrylate with from 3 to 25 fluorine atoms and optionally, 0-50 wt % other acrylates or methacrylates and 0-20 wt %, but not more than 5 mol % of a polyvinyl functional crosslinking agent. These polymers are machinable in the dry state and form clear hydrogels with about 25-75 wt % water content and which possess oxygen-permeabilities 3-7 times higher than conventional hydrogels of similar water content. In the absence of crosslinking, the novel polymers are plasticized by water, forming clear hydroplastics with 30-70 wt % water content. The crosslinked polymers are especially useful for fabricating contact lenses for extended wear by either cutting and polishing a xerogel button, or by spin casting or direct molding in bulk or in solution.

14 Claims, No Drawings