| Microgel Composition (w/w %) | Viscosity (cSt) | Injection thro' 18 gauge cannula (Y/N) | Refractive Index (w/H2O v %) |
|---|---|---|---|
| NVP(55)/VAc(40)/DEGDVE(5) | 180–250 | Y | 1.39(33) |
| NVP(90)/VAc(5)/DEGDVE(5) | <180 | Y | 1.39(31) |
| DMA(80)/HEMA(10)/EGDMA(10) | 730 | Y | 1.395(38) |

## EXAMPLE 14

0.300 g Microgel modified with functional vinyl groups for crosslinking in accordance with Example 11 was weighed into a vial and 0.704 g water was added. On standing, the microgel was dissolved to a clear colorless solution. A photoinitiator for starting the crosslinking was added to the solution (0.102 g) and the mixture was warmed to dissolve. The photoinitiator comprises a photoactive linear polymer of a copolymer of N,N-dimethylacrylamide containing 2.0 mol % of photoactive units derived from 1,6-dimethylbenzoylphosphine oxide. An aliquot of the mixture was easily dispensed through 18 gauge needle to a Teflon disk and covered with a glass slide. On 2 minutes irradiation with blue light (source: Vivadent Heliolux DLX dental gun emitting 400–525 nm), the mixture formed a tack-free gel.

## EXAMPLE 15

Microgel prepared according to Example 11, was dissolved in water to give a 35 w/w % solution. An aliquot of this solution, 358 mg, was mixed with 58 mg of a 25 w/w % solution of the same photoinitiator as in Example 11 and 175 mg of the mixture was transferred through an 18 gauge hypodermic cannula to a Teflon disk. On irradiating with blue light (source: Vivadent Heliolux DLX dental gun, emitting 400–525nm) for 20 seconds, a transparent gel with elastic properties was formed.

What is claimed is:

**1**. An ophthalmically acceptable aqueous solution capable of producing an elastically deformable intraocular lens having a modulus in the range of about 0.1 to 20 kPa, directly in the capsular bag of the eye, the aqueous solution having sufficiently low viscosity to be injectable in the capsular bag of the eye with a conventional cannula and comprising:

(i) water soluble macromolecular particles of a size sufficiently small to provide an optically clear solution with a refractive index of at least 1.39, said particles having functional groups for a crosslinking reaction, and

(ii) a water soluble photoinitiator capable of crosslinking said particles to a solid elastically deformable gel upon exposure to light of a wavelength exceeding about 305 nm.

**2**. An aqueous solution according to claim **1**, wherein said functional groups are reactive vinyl, acrylic or methacrylic groups.

**3**. An aqueous solution according to claim **1**, wherein the macromolecular particles comprise at least one hydrophilic unit and at least one unit contributing to the refractive index of the solution.

**4**. An aqueous solution according to claim **2**, wherein the macromolecular particles have molecular weights of at least 50,000 Daltons and diameters in the range of about 5 to 160 nm.

**5**. An aqueous solution according to claim **3**, wherein the hydrophilic unit is selected from the group consisting of vinyl lactams and acrylamides.

**6**. An aqueous solution according to claim **3**, wherein the hydrophilic unit is N-vinylpyrrolidone or N,N-dimethylacrylamide.

**7**. An aqueous solution according to claim **3**, further comprising vinylic units to which said functional groups for crosslinking are attached.

**8**. An aqueous solution according to claim **7**, wherein said vinylic units are vinyl alcohol units.

**9**. An aqueous solution according to claim **7**, wherein said vinylic units are selected from the group consisting of 2-hydroxyethylacrylate, 2-hydroxyethylmethacrylate, 2-aminohydroxyethylacrylate, 2-aminoethylacrylate, 2-aminoethylmethacrylate, glycidylacrylate and glycidylmethacrylate units.

**10**. An aqueous solution according to claim **3**, wherein the macromolecular particles comprise a crosslinking agent.

**11**. An aqueous solution according to claim **1**, wherein the water soluble photoinitiator comprises photoactive groups attached to linear polymers.

**12**. An aqueous solution according to claim **1**, wherein the water soluble photoinitiator comprises photoactive groups attached to macromolecular particles.

**13**. An aqueous solution according to claim **11**, wherein the photoactive group is selected from the group consisting of acyl-phosphine oxides and aroyl-phosphine oxides.

**14**. An aqueous solution according to claim **13**, wherein the photoactive group comprises an aroyl group selected from a group consisting of 4-carbonylphenylene, 3,5-dimethoxy-4-carbonylphenylene, 3,5-dimethylol-4-carbonylphenylene and 3,5-dimethyl-4-carbonylphenylene.

**15**. An aqueous solution according to claim **14**, wherein the photoactive group is 4-vinylbenzoyldiphenylphosphine oxide.

**16**. An aqueous solution according to claim **11**, wherein the photoinitiator when irradiated by light acts as a crosslinker for the crosslinkable macromolecular particles.

**17**. An aqueous solution according to claim **11**, wherein photoinitiator residues subsequent to crosslinking form an integral part of a network constituting the intraocular lens material.

**18**. A kit-of-parts for preparing an opthalmically acceptable solution capable of producing an elastically deformable intraocular lens having a modulus in the range of about 0.1 to 20 kPa, directly in the capsular bag of the eye, the solution having sufficiently low viscosity to be injectable into the capsular bag of the eye with a conventional cannula, the kit adapted for preparing the ophthalmically acceptable solution just prior to injection into a lens production site, the kit comprising a composition of water soluble macromolecular particles of a size sufficiently small to provide an optically clear solution with a refractive index of at least 1.39, said particles having functional groups for a crosslinking reaction, and a composition of water soluble photoinitiator capable of crosslinking the particles to a solid elastically deformable gel upon exposure to light of a wavelength exceeding about 305 nm, and means for bringing the compositions together into a solution for suitable subsequent injection.

**19**. A kit-of-parts according to claim **18**, further comprising an ophthalmically acceptable aqueous composition.

**20**. An aqueous solution according to claim **1**, wherein the macromolecular particles have a molecular weight of at least 50,000 Daltons.

**21**. An aqueous solution according to claim **1**, wherein the macromolecular particles have diameters in the range of about 5 to 160 nm.

**22**. An aqueous solution according to claim **1**, wherein the macromolecular particles have diameters in the range of about 10 to 150 nm.

**23**. An aqueous solution according to claim **1**, wherein the macromolecular particles have diameters in the range of about 20 to 100 nm.

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