Claims

1. A method for coating an ophthalmic lens in the primary package comprising the steps of:

(a) forming a first polyionic coating solution, said solution comprising at least one negatively-charged or positively-charged polyionic material or a mixture of at least one negatively charged polyionic material and at least one positively charged polyionic material, provided that the molar charge ratio of said mixture of at least one negatively charged polyionic material and at least one positively charged polyionic material in said mixture is from 1:100 to 100:1,

(b) optionally forming a second polyionic coating solution, said solution comprising at least one negatively-charged or positively-charged polyionic material or a mixture of at least one negatively charged polyionic material and at least one positively charged polyionic material, provided that the molar charge ratio of said mixture of at least one negatively charged polyionic material and at least one positively charged polyionic material in said mixture is from 1:100 to 100:1,

(c) contacting an ophthalmic lens with said first solution in the primary package for said ophthalmic lens;

(d) optionally adding said second solution to said first solution and said ophthalmic lens in said primary package;

(e) forming a coating on said ophthalmic lens, said coating comprising said negatively charged material and/or said positively charged material;

(f) sealing the primary package;

(g) maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user;

characterized in that before sealing the primary package, a tablet (T) for adjusting the pH in the primary package is added.

2. A method according to claim 1 comprising the steps of:
   (a) forming a first polyionic coating solution, said solution comprising at least one positively charged polyionic material,
   (b) forming a second polyionic coating solution, said solution comprising at least one negatively charged polyionic material,
   (c) contacting an ophthalmic lens with said first solution in the primary package for said ophthalmic lens;
   (d) adding said second solution to said first solution and said ophthalmic lens in said primary package;
   (e) forming a coating on said ophthalmic lens, said coating comprising said negatively charged material and said positively charged material;
   (f) sealing the primary package;
   (g) maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user.

3. A method according to claim 1 comprising the steps of:
   (a) forming a first polyionic coating solution, said solution comprising at least one negatively charged polyionic material,
   (b) forming a second polyionic coating solution, said solution comprising at least one positively charged polyionic material,
   (c) contacting an ophthalmic lens with said first solution in the primary package for said ophthalmic lens;
   (d) adding said second solution to said first solution and said ophthalmic lens in said primary package;
   (e) forming a coating on said ophthalmic lens, said coating comprising said negatively charged material and said positively charged material;
   (f) sealing the primary package;
   (g) maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user.

4. A method according to claim 1 comprising the steps of:
   (a) forming a polyionic coating solution, said solution comprising at least one negatively charged polyionic material and at least one positively charged polyionic material, wherein the molar charge ratio of said at least one negatively charged polyionic material and at least one positively charged polyionic material is from 1:100 to 100:1,
   (c) contacting an ophthalmic lens with said solution in the primary package for said ophthalmic lens;
   (e) forming a coating on said ophthalmic lens, said coating comprising said negatively charged material and said positively charged material;
   (f) sealing the primary package;
   (g) maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user.

5. A method according to claim 4, wherein the molar charge ratio of said at least one negatively charged polyionic material and at least one positively charged polyionic material is from 1:10 to 10:1.

6. A method according to any one of claims 1 to 5, wherein step (c) comprises
   (c10) dispensing said (first) solution into a primary package; and
   (c20) placing an ophthalmic lens into said (first) solution in the primary package.

7. A method according to any one of claims 1 to 5, wherein step (c) comprises
   (c11) placing an ophthalmic lens in the primary package; and
   (c22) dispensing said (first) solution into the primary package comprising said ophthalmic lens.

8. A method according to any one of claims 1 to 7, wherein the coating on said ophthalmic lens in step (e) is formed without further action.

9. A method according to any one of claims 1 to 7, wherein the forming of the coating in step (e) is induced by one of the following actions or a combination of at least two of the following actions:
(e1) mixing said solution in the primary package using ultrasound;
(e2) changing the pH value of said solution in the primary package;
(e3) changing the osmolarity of said solution in the primary package;
(e4) adding one or more salts to the solution in the primary package;
(e5) adding one or more polyelectrolytes to the solution in the primary package;
(e6) adding one or more solvents to the solution in the primary package;
(e7) changing the temperature of the solution in the primary package.

10. A method according to any one of claims 1 to 8, wherein the negatively charged polyionic material comprises a poly acrylic acid (PAA), a carboxymethyl cellulose (CMC) or a poly (styrene sulfonate) (PSS).

11. A method according to any one of claims 1 to 10, wherein the positively charged material comprises a poly (allylamine hydrochloride) (PAH), a poly amido amine epichlorhydrine (PAE) or a chitosan.

12. A method according to any one of claims 1 to 11, wherein the remaining after-coating solution in the primary package is ophthalmically compatible and is characterized by a pH in the range of from 6.7 to 7.7 and an osmolarity from 270 to 350 mOsmol/kg.

13. A method according to any one of claims 1 to 12, wherein said ophthalmic lens is preconditioned by the steps of:
providing a solvent;
allowing the ophthalmic lens to swell in said solvent;
removing the ophthalmic lens from said solvent after swelling; and
transferring said ophthalmic lens to step (c) above.

14. A method according to claim 13, wherein said solvent comprises an alcohol.

The invention claimed is:

1. A method for coating an ophthalmic lens in a primary package comprising the steps of:

(a) forming a first polyionic coating solution comprising at least one positively charged polyionic material which is polyamidoamine epichlorohydrin;

(b) forming a second polyionic coating solution comprising at least one negatively charged polyionic material;

(c) forming a coating on an ophthalmic lens by contacting the ophthalmic lens in the primary package with said first polyionic coating solution and adding said second polyionic coating solution to said first polyionic coating solution, wherein the coating comprises said negatively charged material and said positively charged material and the ophthalmic lens with the coating thereon is immersed in a remaining-after-coating solution in the primary package;

(d) sealing the primary package containing the ophthalmic lens immersed in the remaining after-coating solution;

(e) autoclaving and then maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user, wherein the remaining after-coating solution in the primary package is ophthalmically compatible and has an osmolarity from 270 to 350 mOsmol/kg.

2. A method according to claim 1, wherein step (c) comprises (c10) dispensing said first polyionic coating solution into a primary package; and (c20) placing an ophthalmic lens into said (first) solution in the primary package.

3. A method according to claim 1, wherein step (c) comprises (c11) placing an ophthalmic lens in the primary package; and (c22) dispensing said first polyionic coating solution into the primary package comprising said ophthalmic lens.

4. A method according to claim 1, wherein the negatively charged polyionic material comprises a poly acrylic acid (PAA), a carboxymethyl cellulose (CMC) or a poly (styrene sulfonate) (PSS).

5. A method according to claim 1, wherein said ophthalmic lens is preconditioned by the steps of: providing a solvent; allowing the ophthalmic lens to swell in said solvent; removing the ophthalmic lens from said solvent after swelling; and transferring said ophthalmic lens to step (c) above.

6. A method according to claim 5, wherein said solvent comprises an alcohol.

7. A method for coating an ophthalmic lens in a primary package comprising the steps of:

(a) forming a first polyionic coating solution comprising at least one negatively charged polyionic material;

(b) forming a second polyionic coating solution comprising at least one positively charged polyionic material which is polyamidoamine epichlorohydrin;

(c) forming a coating on an ophthalmic lens by contacting the ophthalmic lens in the primary package with said first polyionic coating solution and adding said second polyionic coating solution to said first polyionic coating solution, wherein the coating comprises said negatively charged material and said positively charged material and the ophthalmic lens with the coating thereon is immersed in a remaining-after-coating solution in the primary package;

(d) sealing the primary package containing the ophthalmic lens immersed in the remaining after-coating solution;

(e) autoclaving and then maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user, wherein the remaining after-coating solution in the primary package is ophthalmically compatible and has an osmolarity from 270 to 350 mOsmol/kg.

8. A method according to claim 7, wherein step (c) comprises (c10) dispensing said first polyionic coating solution into a primary package; and (c20) placing an ophthalmic lens into said (first) solution in the primary package.

9. A method according to claim 7, wherein step (c) comprises (c11) placing an ophthalmic lens in the primary package; and (c22) dispensing said first polyionic coating solution into the primary package comprising said ophthalmic lens.

10. A method according to claim 7, wherein the negatively charged polyionic material comprises a poly acrylic acid (PAA), a carboxymethyl cellulose (CMC) or a poly (styrene sulfonate) (PSS).

11. A method according to claim 7, wherein said ophthalmic lens is preconditioned by the steps of: providing a solvent; allowing the ophthalmic lens to swell in said solvent; removing the ophthalmic lens from said solvent after swelling; and transferring said ophthalmic lens to step (c) above.

12. A method according to claim 11, wherein said solvent comprises an alcohol.

13. A method for coating an ophthalmic lens in a primary package comprising the steps of:

(a) forming a first polyionic coating solution, said first polyionic coating solution comprising at least one negatively charged polyionic material and at least one positively charged polyionic material which is polyamidoamine epichlorohydrin, wherein the molar charge ratio of said at least one negatively charged polyionic material and at least one positively charged polyionic material is from 1:100 to 100:1, wherein the first polyionic coating solution has a pH of less than 6.0,

(c) forming a coating on an ophthalmic lens by contacting the ophthalmic lens in the primary package with said first polyionic coating solution wherein the coating comprises said negatively charged material and said positively charged material and the ophthalmic lens with the coating thereon is immersed in a remaining-after-coating solution in the primary package;

(d) sealing the primary package containing the ophthalmic lens immersed in the remaining after-coating solution;

(e) autoclaving and then maintaining said coated ophthalmic lens in said primary package with the remaining after-coating solution until insertion of the ophthalmic lens in the eye of the ophthalmic lens user, wherein the remaining after-coating solution in the primary package is ophthalmically compatible and has an osmolarity from 270 to 350 mOsmol/kg.

14. A method according to claim 13, wherein the molar charge ratio of said at least one negatively charged polyionic material and at least one positively charged polyionic material is from 1:10 to 10:1.

15. A method according to claim 13, wherein step (c) comprises (c10) dispensing said first polyionic coating solution into a primary package; and (c20) placing an ophthalmic lens into said (first) solution in the primary package.

16. A method according to claim 13, wherein step (c) comprises (c11) placing an ophthalmic lens in

the primary package; and (c22) dispensing said first polyionic coating solution into the primary package comprising said ophthalmic lens.

17. A method according to claim 13, wherein the coating on said ophthalmic lens in step (c) is formed without further action.

18. A method according to claim 13, wherein the negatively charged polyionic material comprises a poly acrylic acid (PAA), a carboxymethyl cellulose (CMC) or a poly (styrene sulfonate) (PSS).

19. A method according to claim 13, wherein said ophthalmic lens is preconditioned by the steps of: providing a solvent; allowing the ophthalmic lens to swell in said solvent; removing the ophthalmic lens from said solvent after swelling; and transferring said ophthalmic lens to step (c) above.

20. A method according to claim 19, wherein said solvent comprises an alcohol.