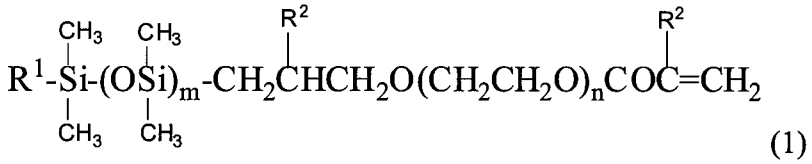
What is claimed is:

1. A silicone hydrogel contact lens, comprising:

a polymeric lens body that is the reaction product of a polymerizable composition, said polymerizable composition comprising

(a) a first siloxane monomer represented by formula (1):



(1)

wherein m of formula (1) represents one integer from 3 to 10, n of formula (1) represents one integer from 1 to 10, R^1 of formula (1) is an alkyl group having from 1 to 4 carbon atoms, and R^2 of formula (1) is a hydrogen atom or a methyl group; and

(b) a second siloxane monomer which is a dual-end methacrylate end-capped polydimethylsiloxane having a number average molecular weight of at least 7,000 daltons;

wherein the silicone hydrogel contact lens, when fully hydrated, has an energy loss from about 25% to about 45%.

2. The contact lens of claim 1, wherein the silicone hydrogel contact lens, when fully hydrated, has an energy loss from about 27% to about 40%.

~~3. The contact lens of claim 1, wherein the energy loss is calculated using equation (B):~~

~~$((Energy_{0\ to\ 100\%\ strain} - Energy_{100\ to\ 0\%\ strain})/ Energy_{0\ to\ 100\%\ strain}) \times 100$ (B)~~

~~where $Energy_{0\ to\ 100\%\ strain}$ represents the energy applied to stretch a sample of the lens to 100% strain at a constant rate, and $Energy_{100\ to\ 0\%\ strain}$ represents the energy released when the sample of the lens is returned to 0% from 100% strain.~~

43. The contact lens of claim 1 or 2, wherein in the first siloxane monomer, m of formula (1) is 4, n of formula (1) is 1, R^1 of formula (1) is a butyl group, and each R^2 of formula (1) is independently either a hydrogen atom or a methyl group.

~~5~~4. The contact lens of any one of claims 1-3, wherein the number average molecular weight of the first siloxane monomer is from 400 daltons to 700 daltons.

~~6~~5. The contact lens of any one of claims 1-4, wherein the polymerizable composition further comprises at least one cross-linking agent.

~~7~~6. The contact lens of claim ~~6~~5, wherein the at least one cross-linking agent comprises a vinyl-containing cross-linking agent.

~~8~~7. The contact lens of claim ~~7~~6, wherein a total amount of vinyl-containing cross-linking agents present in the polymerizable composition is from about 0.01 unit parts to about 2.0 unit parts by weight.

~~9~~8. The contact lens of claim ~~8~~7, wherein a ratio of an amount of the first siloxane monomer present in the polymerizable composition to the total amount of vinyl-containing cross-linking agents present in the polymerizable composition is from 100:1 to 400:1 based on unit parts by weight.

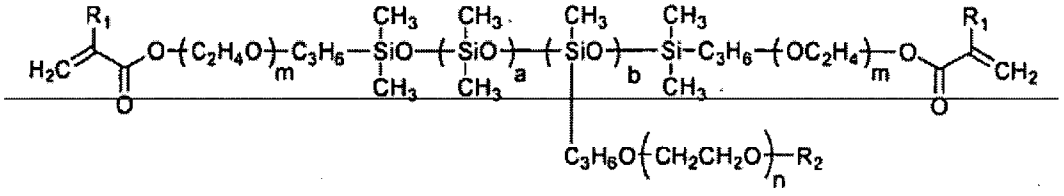
~~10~~9. The contact lens of any one of claims 1-8, wherein the polymerizable composition further comprises at least one hydrophilic monomer.

~~11~~10. The contact lens of claim ~~10~~9, wherein the at least one hydrophilic monomer comprises a hydrophilic amide monomer having one N-vinyl group.

~~12~~11. The contact lens of any one of claims 1-10, wherein a ratio of an amount of the first siloxane monomer present in the polymerizable composition to an amount of the second siloxane monomer present in the polymerizable composition is at least 3:1 based on unit parts by weight.

~~13~~12. The contact lens of any one of claims 1-11, wherein a total amount of siloxane monomers present in the polymerizable composition is from about 35 to about 40 unit parts by weight.

~~14. The contact lens of claim 1, wherein the second siloxane monomer is represented by formula (2):~~



~~(2)~~

~~wherein R_1 of formula (2)is selected from either hydrogen or a methyl group; R_2 of formula (2) is selected from either of hydrogen or a C_{1-4} hydrocarbon group; m represents an integer of from 0 to 10; n of formula (2) represents an integer of from 4 to 100; a and b of formula (2) represent integers of 1 or more; a+b is equal to 20-500; b/(a+b) is equal to 0.01-0.22; and the configuration of siloxane units includes a random configuration.~~

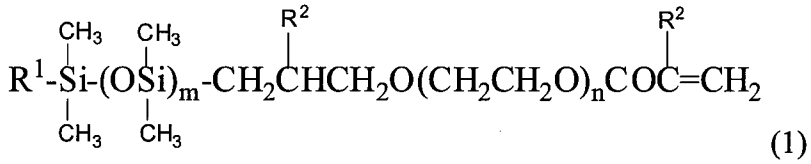
~~15. The contact lens of claim 14, wherein in the second siloxane monomer, m of formula (2) is 0, n of formula (2) is one integer from 5 to 10, a of formula (2) is one integer from 65 to 90, b of formula (2) is one integer from 1 to 10, and R_1 of formula (2) is a methyl group.~~

~~16~~13. A batch of silicone hydrogel contact lenses, comprising a plurality of the contact lens recited in any one of claims 1-12, wherein the batch of silicone hydrogel contact lenses has, when fully hydrated, an average equilibrium water content (EWC) from about 30% wt/wt to about 70% wt/wt, or an average oxygen permeability of at least 55 barrers, or an average captive bubble dynamic advancing contact angle less than 70 degrees, or an average captive bubble static contact angle less than 55 degrees, or any combination thereof, based on averages of values determined for at least 20 individual lenses of the batch.

~~17~~14. A method of manufacturing a silicone hydrogel contact lens, comprising:

providing a miscible polymerizable composition, said polymerizable composition comprising

(a) a first siloxane monomer represented by formula (1):



(1)

wherein m of formula (1) represents one integer from 3 to 10, n of formula (1) represents one integer from 1 to 10, R^1 of formula (1) is an alkyl group having from 1 to 4 carbon atoms, and R^2 of formula (1) is a hydrogen atom or a methyl group; and

(b) a second siloxane monomer which is a dual-end methacrylate end-capped polydimethylsiloxane having a number average molecular weight of at least 7,000 daltons;

polymerizing the polymerizable composition in a contact lens mold assembly to form a polymeric lens body;

contacting the polymeric lens body with a washing liquid to remove extractable material from the polymeric lens body; and

packaging the polymeric lens body in a contact lens packaging solution in a contact lens package;

wherein the silicone hydrogel contact lens has an energy loss from about 25% to about 45% when fully hydrated.

~~18~~15. The method of claim ~~17~~14, wherein the contacting step comprises contacting the polymeric lens body with a washing liquid that is free of a volatile organic solvent.

~~19~~16. The method of claim ~~17~~14 or 15, wherein the number average molecular weight of the first siloxane monomer is from 400 daltons to 700 daltons.

~~20. The method of claim 17, wherein the energy loss is calculated using equation (B):~~

~~((Energy 0 to 100% strain – Energy 100 to 0% strain)/ Energy 0 to 100% strain) x100 (B)~~

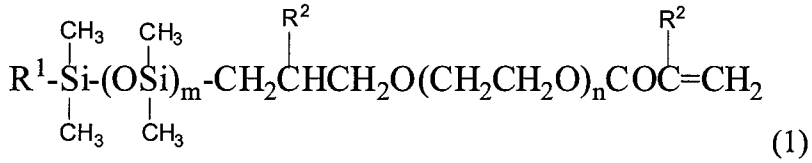
~~where Energy $_{0 \text{ to } 100\% \text{ strain}}$ represents the energy applied to stretch a sample of the lens to 100% strain at a constant rate, and Energy $_{100 \text{ to } 0\% \text{ strain}}$ represents the energy released when the sample of the lens is returned to 0% from 100% strain.~~

What is claimed is:

1. A silicone hydrogel contact lens, comprising:

a polymeric lens body that is the reaction product of a polymerizable composition, said polymerizable composition comprising

(a) a first siloxane monomer represented by formula (1):



(1)

wherein m of formula (1) represents one integer from 3 to 10, n of formula (1) represents one integer from 1 to 10, R^1 of formula (1) is an alkyl group having from 1 to 4 carbon atoms, and R^2 of formula (1) is a hydrogen atom or a methyl group; and

(b) a second siloxane monomer which is a dual-end methacrylate end-capped polydimethylsiloxane having a number average molecular weight of at least 7,000 daltons;

wherein the silicone hydrogel contact lens, when fully hydrated, has an energy loss from about 25% to about 45%.

2. The contact lens of claim 1, wherein the silicone hydrogel contact lens, when fully hydrated, has an energy loss from about 27% to about 40%.

3. The contact lens of claim 1 or 2, wherein in the first siloxane monomer, m of formula (1) is 4, n of formula (1) is 1, R^1 of formula (1) is a butyl group, and each R^2 of formula (1) is independently either a hydrogen atom or a methyl group.

4. The contact lens of any one of claims 1-3, wherein the number average molecular weight of the first siloxane monomer is from 400 daltons to 700 daltons.

5. The contact lens of any one of claims 1-4, wherein the polymerizable composition further comprises at least one cross-linking agent.

6. The contact lens of claim 5, wherein the at least one cross-linking agent comprises a vinyl-containing cross-linking agent.

7. The contact lens of claim 6, wherein a total amount of vinyl-containing cross-linking agents present in the polymerizable composition is from about 0.01 unit parts to about 2.0 unit parts by weight.

8. The contact lens of claim 7, wherein a ratio of an amount of the first siloxane monomer present in the polymerizable composition to the total amount of vinyl-containing cross-linking agents present in the polymerizable composition is from 100:1 to 400:1 based on unit parts by weight.

9. The contact lens of any one of claims 1-8, wherein the polymerizable composition further comprises at least one hydrophilic monomer.

10. The contact lens of claim 9, wherein the at least one hydrophilic monomer comprises a hydrophilic amide monomer having one N-vinyl group.

11. The contact lens of any one of claims 1-10, wherein a ratio of an amount of the first siloxane monomer present in the polymerizable composition to an amount of the second siloxane monomer present in the polymerizable composition is at least 3:1 based on unit parts by weight.

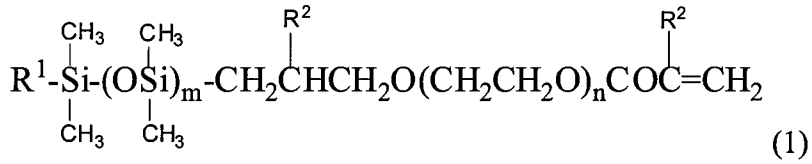
12. The contact lens of any one of claims 1-11, wherein a total amount of siloxane monomers present in the polymerizable composition is from about 35 to about 40 unit parts by weight.

13. A batch of silicone hydrogel contact lenses, comprising a plurality of the contact lens recited in any one of claims 1-12, wherein the batch of silicone hydrogel contact lenses has, when fully hydrated, an average equilibrium water content (EWC) from about 30% wt/wt to about 70% wt/wt, or an average oxygen permeability of at least 55 barrers, or an average captive bubble dynamic advancing contact angle less than 70 degrees, or an average captive bubble static contact angle less than 55 degrees, or any combination thereof, based on averages of values determined for at least 20 individual lenses of the batch.

14. A method of manufacturing a silicone hydrogel contact lens, comprising:

providing a miscible polymerizable composition, said polymerizable composition comprising

(a) a first siloxane monomer represented by formula (1):



(1)

wherein m of formula (1) represents one integer from 3 to 10, n of formula (1) represents one integer from 1 to 10, R^1 of formula (1) is an alkyl group having from 1 to 4 carbon atoms, and R^2 of formula (1) is a hydrogen atom or a methyl group; and

(b) a second siloxane monomer which is a dual-end methacrylate end-capped polydimethylsiloxane having a number average molecular weight of at least 7,000 daltons;

polymerizing the polymerizable composition in a contact lens mold assembly to form a polymeric lens body;

contacting the polymeric lens body with a washing liquid to remove extractable material from the polymeric lens body; and

packaging the polymeric lens body in a contact lens packaging solution in a contact lens package;

wherein the silicone hydrogel contact lens has an energy loss from about 25% to about 45% when fully hydrated.

15. The method of claim 14, wherein the contacting step comprises contacting the polymeric lens body with a washing liquid that is free of a volatile organic solvent.

16. The method of claim 14 or 15, wherein the number average molecular weight of the first siloxane monomer is from 400 daltons to 700 daltons.