CLAIMS

1. A silicone hydrogel contact lens formulation comprising:
    a. at least 40% (wt/wt) of a polymerizable siloxane component;
    b. at least 30% (wt/wt) of hydrophilic *N*-vinyl amide monomer(s);
    c. triphenylphosphine (TPP); and
    d. 1,4-bis[(2-methacryloxyethyl)amino]-9,10-anthraquinone (RB247).

2. The formulation of claim 1, further comprising:
    e. a benzophenone UV-absorbing agent, especially 2-(4-benzoyl-3-hydroxyphenoxy) ethyl acrylate (UV416).

3. The formulation of claim 2, wherein (e.) the benzophenone UV-absorbing agent is present in an amount of from 0.1% (wt/wt) to 3.0% (wt/wt).

4. The formulation of any one of claims 1 to 3, comprising:
    f. a benzotriazole HEVL absorber.

5. The formulation of claim 4, wherein the benzotriazole HEVL absorber includes 2-[3'-tert-butyl-2'-hydroxy-5'-(3"-methacryloyloxy propoxy)phenyl]-5-chloro-2*H*-benzotriazole (UV28), 2-(1,1-dimethylethyl)-4-[3-[(4-ethenyl phenyl) methoxy]propoxy]-6-(5-methoxy-2*H*-benzotriazol-2-yl)-phenol (UV1), 2-(5-chloro-2*H*-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-ethenyl-phenol (UV5 / UVAM), 2-[2'-hydroxy-3'-*tert*-butyl-5'-(3"-methacryloyloxypropoxy)phenyl]-5-methoxy-2*H*-benzotriazole (UV13), 2-3'-*tert*-butyl-2'-hydroxy-5'-(3"-dimethylvinylsilylpropoxy)-2'-hydroxy-phenyl)-5-methoxybenzotriazole (UV15), especially 2-[2'-hydroxy-3'-*tert*-butyl-5'-(3"-methacryloyloxypropoxy)phenyl]-5-methoxy-2*H*-benzotriazole (UV13) or 2-[2'-hydroxy-3'-*tert*-butyl-5'-(3"-methacryloyloxypropoxy)phenyl]-5-chloro-2*H*-benzotriazole (UV28).

6. The formulation of claim 4 or claim 5, wherein the benzotriazole HEVL absorber is present in an amount of from 0.1% (wt/wt) to 3.0% (wt/wt).

7. The formulation of any preceding claim, comprising *N*-methyl *N*-vinyl acetamide in an amount of from 35 to 50% (wt/wt).

8. The formulation of any preceding claim, wherein the *N*-vinyl amide monomer component is present in an amount of at least 37% (wt/wt).

9. The formulation of any preceding claim, further comprising:
    g. at least 5% (wt/wt) of non-siloxane hydrophobic monomers, especially hydrophobic methacrylate monomers.

10. The formulation of claim 9, wherein the hydrophobic monomers include hydroxybutyl methacrylate, isobornyl methacrylate or a combination of hydroxybutyl methacrylate and isobornyl methacrylate.

11. The formulation of any preceding claim, wherein the polymerizable siloxane component is present in an amount of at least 45% (wt/wt).

12. The formulation of any preceding claim, wherein the polymerizable siloxane component comprises di-functional siloxane(s) having a molecular weight of at least 8,000 daltons, optionally in an amount of from 20 to 40% (wt/wt).

13. The formulation of any preceding claim, wherein the polymerizable siloxane component comprises mono-functional, (meth)acrylate-containing siloxane(s) having a molecular weight of less than 3000 daltons, optionally in an amount of from 10 to 30% (wt/wt).

14. The formulation of any preceding claim, wherein at least 40% (wt/wt) of the polymerizable siloxane content is di-functional siloxanes having a molecular weight of at least 8,000 daltons, and wherein at least 25% (wt/wt) of the polymerizable siloxane content is mono-functional siloxanes having a molecular weight of less than 3000 daltons.

15. The formulation of any preceding claim, wherein triphenylphosphine (TPP) is present in an amount of from 0.1 to 2% (wt/wt).

16. The formulation of claim 1, comprising:

a1. di-functional siloxanes having a molecular weight of at least 8,000 daltons in an amount of from 20 to 40% (wt/wt);

a2. mono-functional, (meth)acrylate-containing siloxanes having a molecular weight of less than 3000 daltons in an amount of from 10 to 30 (wt/wt);

b. *N*-methyl *N*-vinyl acetamide in an amount of from 37 to 50% (wt/wt);

c. at least 0.2% (wt/wt) TPP;

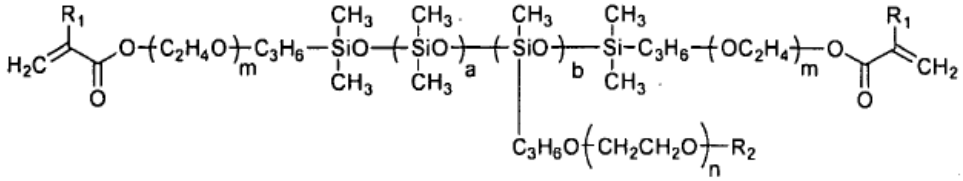
d. at least 0.005% (wt/wt) RB247;

e. a benzophenone UV-absorbing agent in an amount of at least 0.1% (wt/wt);

f. a benzotriazole HEVL absorber in an amount of at least 0.1% (wt/wt); and

g. at least 5% (wt/wt) of non-siloxane hydrophobic methacrylate monomers, including hydroxybutyl methacrylate, isobornyl methacrylate or a combination of hydroxybutyl methacrylate and isobornyl methacrylate.

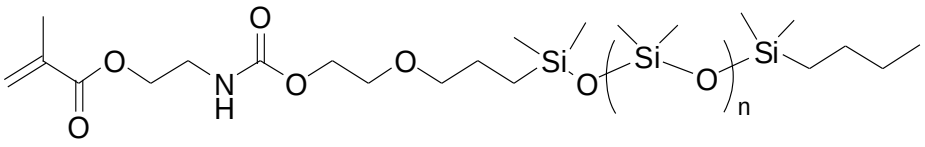
17. The formulation of any preceding claim, wherein the polymerizable siloxane component includes a di-functional siloxane monomer represented by formula (III),



(III)

wherein R_1 is selected from either hydrogen or a methyl group; R_2 is selected from either hydrogen or a $C_{1\text{-}4}$ hydrocarbon group; m represents an integer of from 0 to 10; n represents an integer of from 4 up to about 15, 25, or 100; a and b 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.

18. The formulation of any preceding claim, wherein the polymerizable siloxane component includes a mono-functional methacrylate-containing siloxane monomer represented by formula (II),



(II)

where n is an integer from about 10 to 15.

19. The formulation of any preceding claim, which is a thermally cured formulation that further comprises:
    h. at least one thermal radical initiator.

20. A silicone hydrogel contact lens obtained from the polymerisation of the formulation of any preceding claim.