

What is claimed is:

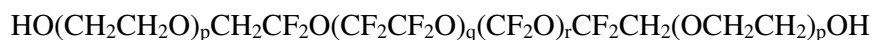
1. A medical article formed from a polyurethane-based resin, which is a random copolymer of a reaction product of the following ingredients:

a diisocyanate;

a diol chain extender;

a polyglycol; and

a modifying oligomer comprising a diol-containing perfluoropolyether, the diol-containing perfluoropolyether being incorporated into a backbone of the polyurethane-based resin formed by the diisocyanate, the polyglycol, and the diol chain extender, the diol-containing perfluoropolyether having a structure of



wherein $p+q+r$ provide a fluorine content in a range of 55% to 60% by weight and the average molecular weight of the modifying oligomer is in the range of 1500 to 2200 g/mol;

wherein a hard segment content is in the range of from 25% to 75% by weight and a soft segment content of the resin is in the range of from 75% to 25% by weight, the perfluoropolyether being present in the soft segment in an amount in the range of from 0.1 to 10% by weight of the overall resin composition, and the medical article is effective as a self-lubricating and/or self-anti-fouling medical article.

2. The medical article of claim 1, wherein a concentration of the perfluoropolyether at a surface of the medical article is higher than a theoretical concentration of the perfluoropolyether based on uniform distribution of the ingredients.

3. The medical article of claim 1, wherein the modifying oligomer further includes a monofunctional polysiloxane, the monofunctional polysiloxane being incorporated into the polyurethane-based resin as a side chain.

4. The medical article of claim 3, wherein the polysiloxane is present in a soft segment of the polyurethane-based resin as a side chain in an amount ranging from 0.1 to 9.9% by weight

and the perfluoropolyether is present in an amount in the range of from 0.1 to 9.9% by weight of the overall resin composition.

5. The medical article of claim 1, wherein the polyglycol comprises a polytetramethylene ether glycol and polyethylene glycol 4000, the polyethylene glycol 4000 being present in a soft segment of the polyurethane-based resin in an amount in the range of from 0 to 10% by weight in the overall resin composition.

6. The medical article of claim 1, wherein the modifying oligomer is present in the polyurethane-based resin in an amount in the range of from about 0.1 to about 10% by weight of the overall composition of the polyurethane-based resin.

7. The medical article of claim 1, wherein the polyurethane-based resin comprises a tensile at break of at least 6000 psi, and/or an elongation at break of 150% or more.

8. A medical article formed from a polyurethane-based resin, which is a reaction product of the following ingredients:

a diisocyanate;

a diol chain extender;

a polyglycol; and

a modifying oligomer comprising a monofunctional polysiloxane, the monofunctional polysiloxane being incorporated into as a side chain of the polyurethane-based resin formed by the diisocyanate, the polyglycol, and the diol chain extender;

wherein a hard segment content is in the range of from 25% to 75% by weight and a soft segment content of the resin is in the range of from 75% to 25% by weight and the medical article is effective as a self-lubricating and/or self-anti-fouling medical article.

9. The medical article of claim 8, wherein the monofunctional polysiloxane comprises monodialcohol-terminated polydimethylsiloxane.

10. The medical article of claim 8, wherein a concentration of the polysiloxane at a surface of the medical article is higher than a theoretical concentration of the polysiloxane based on uniform distribution of the ingredients.

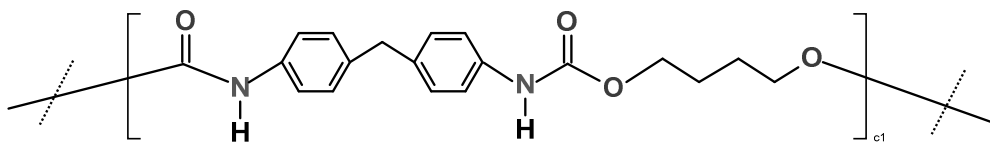
11. The medical article of claim 8, wherein the polysiloxane is present in a soft segment of the polyurethane-based resin as a side chain in an amount in the range of from 0.1 to 10% by weight of the overall resin composition.

12. The medical article of claim 8, wherein the polyglycol comprises a polytetramethylene ether glycol and polyethylene glycol 4000, the polyethylene glycol 4000 being present in a soft segment of the polyurethane-based resin in an amount in the range of from 0 to 10% by weight of the overall resin composition; and/or diisocyanate is selected from the group consisting of: an aliphatic diisocyanate, alicyclic diisocyanate and an aromatic diisocyanate, and/or the chain extender is selected from the group consisting of: ethylene glycol, 1,3-propylene glycol, 1,4-butanediol, neopentyl glycol, and alicyclic glycols having up to 10 carbon atoms, and/or the polyglycol is selected from the group consisting of: polyalkylene glycol, polyester glycol, polycarbonate glycol, and combinations thereof.

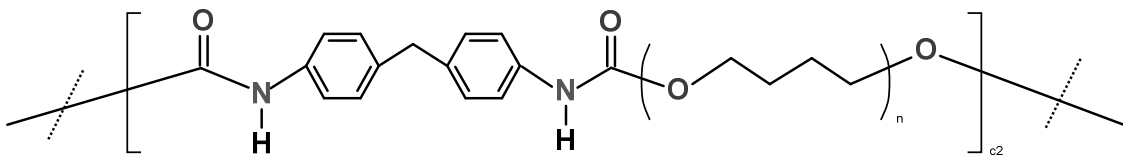
13. The medical article of claim 8, wherein the polysiloxane is present in the polyurethane-based resin in an amount in the range of from about 0.1 to about 10% by weight of the overall composition of the polyurethane-based resin.

14. The medical article of claim 8, wherein the polyurethane-based resin comprises a tensile at break of at least 6000 psi, and/or an elongation at break of 150% or more.

15. A medical article comprising a polyurethane-based resin that is a random copolymer comprising chain segments of (A) and (B), optionally (C), and one or both of (D) and (E) as follows:

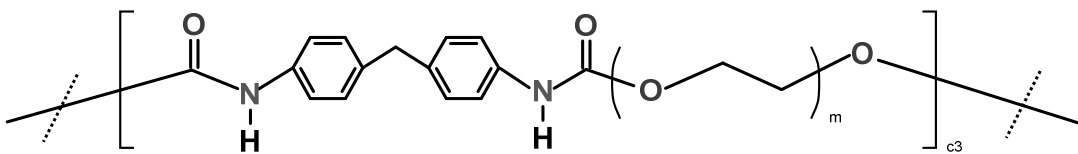


(A)



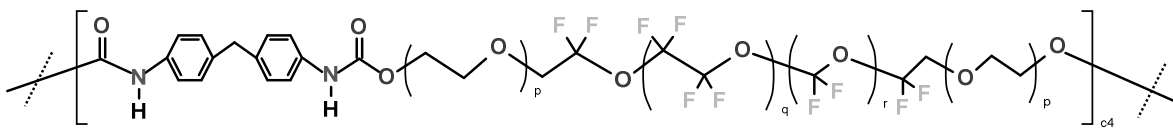
(B)

wherein n is in the range of 3 to 40;



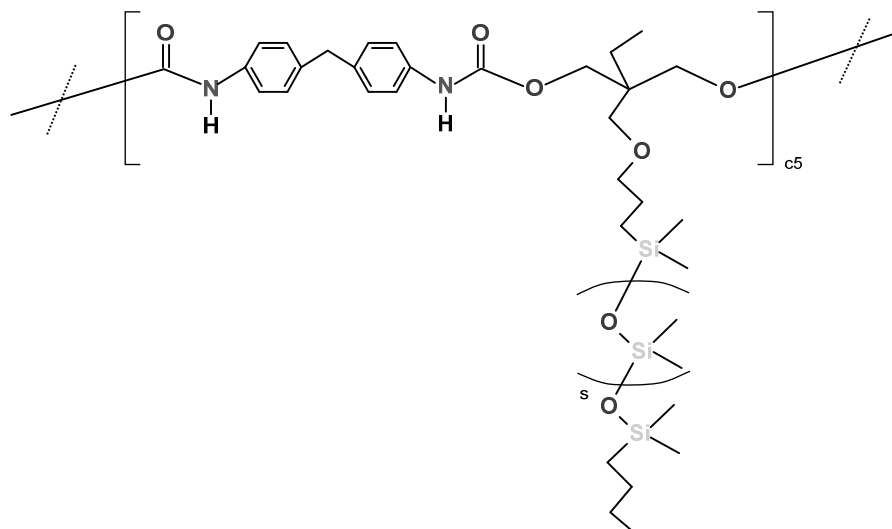
(C)

wherein m is in the range of 4 to 182;



(D)

wherein the total of $p+q+r$ is such that the fluorine content of the oligomer is in the range of 55% to 60% by weight and the average molecular weight of the oligomer is in the range of 1500 to 2200 g/mol;



(E)

wherein s is in the range of 5 to 200;

wherein a hard segment content is in the range of from 25% to 75% by weight and a soft segment content of the resin is in the range of from 75% to 25% by weight.

16. The medical article of claim 15, wherein the random copolymer comprises chain segments of (A), (B), and (D); or (A), (B), (C), and (D).
17. The medical article of claim 15, wherein the random copolymer comprises chain segments of (A), (B), and (E); or (A), (B), (D), and (E).
18. The medical article of claim 15, wherein the random copolymer comprises chain segments of (A), (B), (C), and (E); or (A), (B), (C), (D), and (E).