CLAIMS:

1. An article, comprising:

a low friction surface comprising

an oligofluorinated additive admixed with a base polymer;

wherein a coefficient of friction of said low friction surface is reduced by at least 30% compared to a surface of the base polymer without said oligofluorinated additive; wherein the oligofluorinated additive is according to Formula (I):

F_T-[B-A]$_n$-B-F_T (I)

wherein

(i) A includes polypropylene oxide, polyethylene oxide, polypropylene glycol-polyethylene glycol block copolymer, polysiloxane-polyethylene glycol block copolymer, polysiloxane-polypropylene glycol block copolymer, or

other block copolymers containing block segments selected from the group of polypropylene oxide, polyethylene oxide;

(ii) B is a segment comprising urethane; and

(iii) F_T is $CF_3(CF_2)_s(CH_2CH_2O)_x$, where x is from 0 to 10 and s is from 1 to 20, and

(iv) n is an integer from 1 to 10.

2. The article according to claim 1, wherein the coefficient of friction of said low friction surface is measured by a pinch test.

3. The article according to any one of claims 1-2, wherein the surface is in a hydrated state.

4. The article according to any one of claims 1-3, wherein said article is a medical device.

5. The article according to claim 4, wherein said medical device is a catheter selected from the group consisting of a vascular catheter, a drainage catheter, a neurovascular catheter, an infusion catheter, a parenteral feeding catheter and a urological catheter.

6. The article according to any one of claims 1-5, wherein said low friction surface is an outer surface.

7. The article according to any one of claims 1-5, wherein said low friction surface is an inner surface.

8. The article according to any one of claims 1-7, wherein said low friction surface is obtained by applying a coating comprising an oligofluorinated additive and a base polymer.

9. The article according to any one of claims 1-8, wherein said base polymer is selected from the group consisting a polyurethane, a silicone, a polyamide, a polyester, a co-polyester, a polyether, a polyether-block-amide co-polymer, a polypropylene, a polyethylene, a polyvinylchloride, a polysulfone, a polyetherimide, a polycarbonate, a polyetheretherketone, an ethyl vinyl acetate, a polyolefin, a styrenic block copolymer, a vulcanized rubber and a mixture thereof.

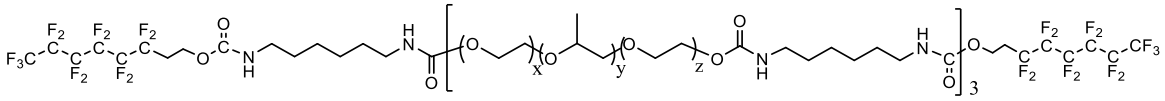
10. The article according to any one of claims 1-8, wherein said base polymer is selected from the group consisting of a polyurethane, a silicone,a polyether block amide co-polymer, a polyamide, a polyvinyl chloride, and a mixture thereof.

11. The article according to claim 2, wherein a coefficient of friction, as measured by a pinch test, is reduced by at least 50% of said base polymer.

12. The article according to any one of claims 1-11, wherein said oligofluorinated additive is present in an amount of 0.05-15 wt. %, relative to said base polymer.

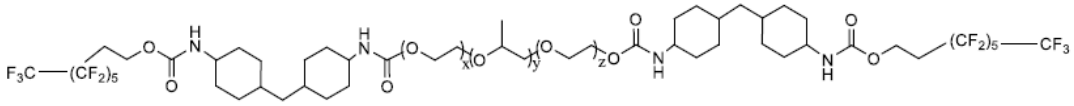
13. The article according to any one of claims 1-12, wherein said oligofluorinated additive is of Formula (I) is selected from

Compound 1



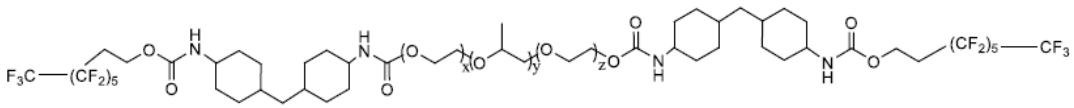
having a PEG content of 50 wt.%; (x + z):y ratio approximately 1.38; Mn: ~ 1,900 g/mol,

Compound 2



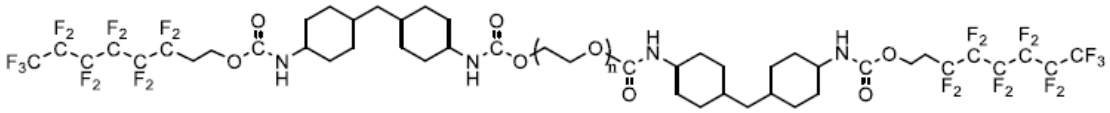
having a PEG content of 50 wt.%; (x + z): y ratio approximately 1.38; Mn: ~ 1,900 g/mol,

Compound 3



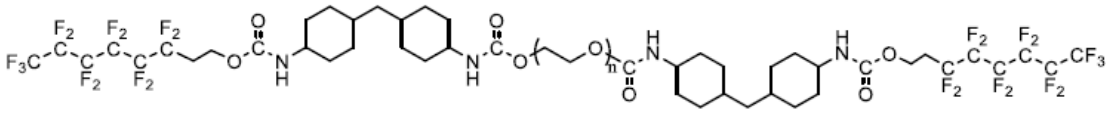
having a PEG content of 40 wt.%; (x + z): y ratio approximately 0.88; Mn: ~ 2,900 g/mol,

Compound 4



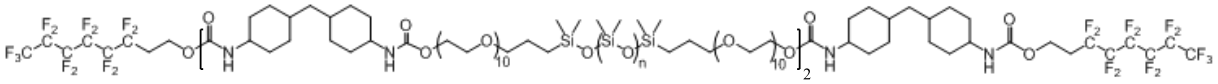
where n ~46,

Compound 5



where n ~9, and

Compound 6



where n = 20 to 28.

14. The article according to claim 13, wherein said base polymer is selected from the group consisting of a polyurethane, a silicone, a polyether block amide co-polymer, a polyamide, a polyvinyl chloride, and a mixture thereof.

15. A method of reducing the coefficient of friction of a surface, said method comprising:

applying a mixture of an oligofluorinated additive and a base polymer, to a surface in need thereof,

wherein the oligofluorinated additive is according to Formula (I):

F_T-[B-A]$_n$-B-F_T (I)

wherein

(i) A includes polypropylene oxide, polyethylene oxide, polypropylene glycol-polyethylene glycol block copolymer, polysiloxane-polyethylene glycol block copolymer, polysiloxane-polypropylene glycol block copolymer, or

other block copolymers containing block segments selected from the group of polypropylene oxide, polyethylene oxide,

(ii) B is a segment comprising a urethane; and

(iii) F_T is $CF_3(CF_2)_s(CH_2CH_2O)_x$, where x is from 0 to 10 and s is from 1 to 20, and

(iv) n is an integer from 1 to 10, and

a coefficient of friction of said low friction surface is reduced by at least 30% compared to a

surface of the base polymer without said oligofluorinated additive as measured by a pinch test.

16. The method according to claim 15, wherein said mixture comprises of 0.05-15 wt. % of said oligofluorinated additive relative to said base polymer.

17. A method of producing a medical device having a reduced coefficient of friction, said method comprising extruding, molding or coating a composition comprising an oligofluorinated additive and a base polymer,

wherein the oligofluorinated additive is according to Formula (I):

F_T-[B-A]$_n$-B-F_T (I)

wherein

(i) A includes polypropylene oxide, polyethylene oxide, polypropylene glycol-polyethylene glycol block copolymer, polysiloxane-polyethylene glycol block copolymer, polysiloxane-polypropylene glycol block copolymer, or

other block copolymers containing block segments selected from the group of polypropylene oxide, polyethylene oxide,

(ii) B is a segment comprising a urethane; and

(iii) F_T is $CF_3(CF_2)_s(CH_2CH_2O)_x$, where x is from 0 to 10 and s is from 1 to 20, and

(iv) n is an integer from 1 to 10, and

a coefficient of friction of said medical device surface is reduced by at least 30% compared to a surface of the base polymer without said oligofluorinated additive as measured by a pinch test.