We claim:

1. A fuel mixture comprising:

a) a hydrocarbon fuel; and

b) a lubricity additive according to formula I:

$$R^1[(-O-R^2)_n-Q]_p \quad (I)$$

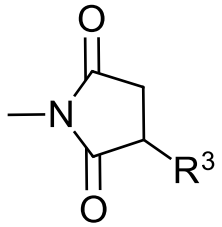
wherein p is 3 or greater;

wherein each n is independently selected from integers equal to 2 or greater;

wherein R^1 is a C3-C20 aliphatic hydrocarbon group of valence p which is branched or linear and which is substituted or unsubstituted;

wherein each R^2 is independently selected from C2-C20 divalent aliphatic or aromatic hydrocarbon groups which are branched or linear and which are substituted or unsubstituted; and

wherein each Q is independently selected from $-NH_2$ or a moiety according to formula II:



(II)

wherein each R^3 is independently selected from C8-C60 alkenyl groups which are substituted or unsubstituted,

providing that at least one Q is the moiety according to formula II.

2. The fuel mixture according to claim 1 wherein at least two Q's are moieties according to formula II.

3. The fuel mixture according to any of claims 1-2 wherein p is 3 or 4.

4. The fuel mixture according to any of claims 1-2 wherein p is 3.

5. The fuel mixture according to any of claims 1-4 wherein each n is independently selected from integers from 2-40 inclusive.

6. The fuel mixture according to any of claims 1-4 wherein each n is independently selected from integers from 2-20 inclusive.

7. The fuel mixture according to any of claims 1-4 wherein each n is independently selected from integers from 2-8 inclusive.

8. The fuel mixture according to any of claims 1-7 wherein each R^2 is independently selected from C2-C6 divalent aliphatic hydrocarbon groups which are branched or linear and which are substituted or unsubstituted.

9. The fuel mixture according to any of claims 1-7 wherein each R^2 is independently selected from C2-C4 divalent aliphatic hydrocarbon groups which are branched or linear and which are substituted or unsubstituted.

10. The fuel mixture according to any of claims 1-7 wherein each R^2 is independently selected from C2-C3 divalent aliphatic hydrocarbon groups which are branched or linear and which are substituted or unsubstituted.

11. The fuel mixture according to any of claims 1-7 wherein each R^2 is independently selected from the group consisting of $-CH_2CH_2-$, $-CH(CH_3)CH_2-$, $-CH_2CH(CH_3)-$, and $-CH(Ph)-CH_2-$.

12. The fuel mixture according to any of claims 1-7 wherein each R^2 is independently selected from the group consisting of $-CH(CH_3)CH_2-$ and $-CH_2CH(CH_3)-$.

13. The fuel mixture according to any of claims 1-12 wherein R^1 is selected from C3-C12 aliphatic hydrocarbon groups of valence p which are branched or linear and which are substituted or unsubstituted.

14. The fuel mixture according to any of claims 1-12 wherein R^1 is selected from C3-C6 aliphatic hydrocarbon groups of valence p which are branched or linear and which are substituted or unsubstituted.

15. The fuel mixture according to any of claims 1 to 14 wherein the hydrocarbon fuel is a middle distillate fuel.

16. The fuel mixture according to any of claims 1 to 14 wherein the hydrocarbon fuel is a diesel fuel derived from petroleum or biobased feedstock.

17. A method of improving fuel lubricity performance comprising adding to a hydrocarbon fuel a lubricity additive according to formula I of any of claims 1-16.

18. The method according to claim 17 wherein the hydrocarbon fuel is a middle distillate fuel.

19. The method according to claim 17 wherein the hydrocarbon fuel is a diesel fuel.

20. The method according to claim 17 wherein the hydrocarbon fuel is an ultra-low sulfur diesel fuel.

21. The method according to claim 17 wherein the hydrocarbon fuel is a diesel fuel derived from petroleum or biobased feedstock.

22. The method according to claim 17 wherein the hydrocarbon fuel is a bio-based fuel.