CLAIMS

1. A fuel composition comprising:

greater than 50 wt % of a hydrocarbon fuel boiling in the gasoline or diesel range;

a minor amount a zinc chelator; and

a minor amount of a friction modifier, wherein the friction modifier includes at least one polar group.

2. The fuel composition of claim 1, wherein the at least one polar group is an alcohol moiety, an amide moiety, an amine moiety or an ester moiety.

3. The fuel composition of claim 1, wherein the zinc chelator is present in 25 to 5000 ppm.

4. The fuel composition of claim 1, wherein the friction modifier is present in 0.015 to 2.0 wt%.

5. The fuel composition of claim 1, wherein the zinc chelator contains a dicarbonyl moiety, an ester moiety, an amide moiety, an amine moiety, an amino methyl moiety, a methyl pyridyl moiety, a quinolyl moiety, a pyrazyl moiety, a nitrogen heterocycle moiety, a pyrrole moiety, a pyrrolidine moiety, an imidazole moiety, an imidazoline moiety, a triazole moiety, or a carboxylate moiety.

6. The fuel composition of claim 1, wherein the zinc chelator is acetyl acetone, ethyl acetoacetate, acetoacetic ester, acetoacetic amide, hydroxamic acid, hydrazide, squaric acid, carbamoylphosphonate, oxazoline, N-hydroxyurea, N,N,N′,N′-tetrakis(2-pyridinylmethyl)-1,2-ethanediamine, ethylenediaminetetraacetic acid, histidine, phenylalanine, tyrosine, tryptophan, alanine, glycine, cysteine, hydroxyproline, γ-

carboxyglutamate, citrulline, homoserine, norleucine, homoproline, proline, or 1,1,3,3-tetramethylguanidine salt of 2-ethylhexanoic acid, or diethanolisostearamide.

7. The fuel composition of claim 1, wherein the friction modifier is a glycerol monooleate, diethanolamide, diethanolamine or diisopropanolamine.

8. The fuel composition of claim 1, further comprising oxygenate, anti-knock agent, detergent, dispersant, antioxidant, metal deactivator, demulsifier, pour point depressant, flow improver, or cetane improver.

9. A fuel concentrate composition comprising (1) from 90 to 30 wt % of an organic solvent boiling in a range of from 65°C to 205°C and (2) from 10 to 70 wt % of fuel efficiency improver including a zinc chelator and a friction modifier having at least one polar group.

10. The fuel concentrate composition of claim 9, wherein the at least one polar group is an alcohol moiety, an amide moiety, an amine moiety or an ester moiety.

11. The fuel concentrate composition of claim 9, wherein the zinc chelator contains a dicarbonyl moiety, an ester moiety, an amide moiety, an amine moiety, an amino methyl moiety, a methyl pyridyl moiety, a quinolyl moiety, a pyrazyl moiety, a nitrogen heterocycle moiety, a pyrrole moiety, a pyrrolidine moiety, an imidazole moiety, an imidazoline moiety, a triazole moiety, or a carboxylate moiety.

12. The fuel concentrate composition of claim 9, further comprising oxygenate, anti-knock agent, detergent, dispersant, antioxidant, metal deactivator, demulsifier, pour point depressant, flow improver, or cetane improver.

13. A method of improving fuel efficiency in a spark-ignited combustion engine, the method comprising:

supplying to the engine a fuel composition comprising a zinc chelator and a friction modifier having at least one polar group.

14. The method of claim 13, wherein the at least one polar group is an alcohol moiety, an amide moiety, an amine moiety or an ester moiety.

15. The method of claim 13, wherein the zinc chelator contains a dicarbonyl moiety, an ester moiety, an amide moiety, an amine moiety, an amino methyl moiety, a methyl pyridyl moiety, a quinolyl moiety, a pyrazyl moiety, a nitrogen heterocycle moiety, a pyrrole moiety, a pyrrolidine moiety, an imidazole moiety, an imidazoline moiety, a triazole moiety, or a carboxylate moiety.

16. The method of claim 13, wherein the zinc chelator is acetyl acetone, ethyl acetoacetate, acetoacetic ester, acetoacetic amide, hydroxamic acid, hydrazide, squaric acid, carbamoylphosphonate, oxazoline, N-hydroxyurea, N,N,N′,N′-tetrakis(2-pyridinylmethyl)-1,2-ethanediamine, ethylenediaminetetraacetic acid, histidine, phenylalanine, tyrosine, tryptophan, alanine, glycine, cysteine, hydroxyproline, γ-carboxyglutamate, citrulline, homoserine, norleucine, homoproline, proline, or 1,1,3,3-tetramethylguanidine salt of 2-ethylhexanoic acid, or diethanolisostearamide.

17. The method of claim 13, wherein the friction modifier is present in 0.015 to 2.0 wt%.

18. The method of claim 13, wherein the zinc chelator is present in 25 to 5000 ppm of the fuel composition.

19. The method of claim 13, wherein the fuel composition further comprises oxygenate, anti-knock agent, detergent, dispersant, antioxidant, metal deactivator, demulsifier, pour point depressant, flow improver, or cetane improver.

20. The method of claim 13, wherein the engine operates between 1000 to 3000 rpm.

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