

What is claimed is:

1. A composition comprising:
 - a. at least one fuel that is a diesel fuel, a biodiesel fuel, or combinations thereof;
 - b. less than 100ppm, less than 50ppm (or less than 25ppm, less than 10ppm, 1 to 7ppm, or 5 to 7ppm) of an alkylene-coupled C₁₀ to C₆₀ (or C₁₀ to C₄₀, C₁₄ to C₃₂ or C₂₄ to C₂₈) alkylphenol;
 - c. 25 to 500ppm (or 50 to 500ppm, or 150 to 450ppm or 250 to 450ppm, or 250 to 400ppm) of a terpolymer; and
 - d. 5 to 90ppm (or 10 to 70ppm, or 10 to 60ppm, or 20 to 60ppm) of hydrocarbyl-substituted amine detergent having at least one tertiary amino group.
2. The composition of claim 1, wherein the alkylene-coupled alkylphenol is an alkylene-coupled C₂₄ to C₂₈ alkylphenol.
3. The composition of claim 2, wherein the alkylene-coupled C₂₄ to C₂₈ alkylphenol is an aldehyde-coupled phenolic resin.
4. The composition of any of the above claims, wherein the terpolymer is a terpolymer of two C₂ to C₄₀- α -olefins and a C₁ to C₂₀-alkyl ester of an ethylenically unsaturated monocarboxylic acid having 3 to 15 carbon atoms.
5. The composition of claim 4, wherein the terpolymer is formed from ethylene, propylene, and vinyl acetate.
6. The composition of any of the above claims, wherein the hydrocarbyl-substituted amine detergent is the reaction product of
 - a. a hydrocarbyl-substituted acylating agent; and
 - b. a nitrogen-containing compound having a nitrogen atom capable of reacting with the hydrocarbyl-substituted acylating agent.
7. The composition of claim 6, wherein the hydrocarbyl-substituted acylating agent is a hydrocarbyl-substituted succinic anhydride or hydrocarbyl-substituted succinic acid.
8. The composition of claim 6 or 7, wherein the hydrocarbyl-substituent is dodecenylene, hexadecenylene, butylene, isobutylene, polyisobutylene, or combinations thereof.

9. The composition of claim 8, wherein the hydrocarbyl-substituent is a polyisobutylene having a number average molecular weight ranging from 100 to 2300, or 100 to 1000, or 250 to 750, or 550.

10. The composition of any of the above claims, wherein the hydrocarbyl-substituted amine detergent having at least one tertiary amino group (d.) is quaternized.

11. The composition of claim 8, wherein the hydrocarbyl-substituted amine detergent is quaternized with a quaternizing agent comprising at least one dialkyl sulfate, alkyl halide, hydrocarbyl substituted carbonate, hydrocarbyl epoxide, carboxylate, alkyl ester or combinations thereof.

12. The composition of any of the above claims, further having at least one other additive comprising a detergent, a dispersant, a demulsifier, a foam inhibitor, a lubricity agent, a cold flow improver, an antioxidant, a corrosion inhibitor, a cetane improver, a metal deactivator, a solvent, or a mixture thereof.

13. The composition of claim 10, wherein the at least one other additive comprises at least one detergent/dispersant that is an amphiphilic substance which possess at least one hydrophobic hydrocarbon radical with a number average molecular weight of 100 to 10000 and at least one polar moiety selected from (i) Mono- or polyamino groups having up to 6 nitrogen atoms, at least one nitrogen atom having basic properties; (ii) Hydroxyl groups in combination with mono or polyamino groups, at least one nitrogen atoms having basic properties; (v) Polyoxy-C₂ to C₄ alkylene moieties terminated by hydroxyl groups, mono- or polyamino groups, at least one nitrogen atom having basic properties, or by carbamate groups; (vii) Moieties derived from succinic anhydride and having hydroxyl and/or amino and/or amido and/or imido groups; and/or (viii) Moieties obtained by Mannich reaction of substituted phenols with aldehydes and mono-or polyamines.

14. The composition of any of the above claims, further comprising an ethoxylated alkyl amine.

15. The composition of any of the above claims, wherein the fuel has a total normal paraffin content of at least 5 to 30wt%, based on a total weight of the fuel and wherein the normal paraffin distribution is between C₅ to C₄₄ or C₅ to C₃₃, or C₅ to C₂₈, or C₁₁ to C₂₈ as measured by gas chromatography (ASTM D2887).

16. The composition of any of the above claims, wherein the cloud point temperature ("CP") of the fuel ranges from -17°C to 14°C as measured using ASTM test method D5773.

17. The composition of any of the above claims, wherein the cold filter plugging point ("CFPP") of the composition is at least 5°C, 10°C, 20°C, or 30°C lower than the CFPP of the fuel as measured using ASTM D6371.

18. A method of reducing the cold filter plugging point ("CFPP") of a fuel, said method comprising adding the following components to said fuel:

a. less than 100ppm, less than 50ppm (or less than 25ppm, less than 10ppm, 1 to 7ppm, or 5 to 7ppm) of an alkylene-coupled C₁₀ to C₆₀ (or C₁₀ to C₄₀, C₁₄ to C₃₂ or C₂₄ to C₂₈) alkylphenol;

b. 25 to 500ppm (or 50 to 500ppm, or 150 to 450ppm or 250 to 450ppm, or 250 to 400ppm) of a terpolymer; and

c. 5 to 90ppm, (or 10 to 70ppm, to 60ppm, or 10 to 55ppm) of a hydrocarbyl-substituted amine detergent having at least one tertiary amino group.

19. The method of claim 18, wherein said fuel comprises at least one fuel that is a diesel fuel, a biodiesel fuel, or combinations thereof.

20. The method of claim 18 or 19, wherein the fuel has a total normal paraffin content of at least 5 to 30wt%, based on a total weight of the fuel and wherein the normal paraffin distribution is between C₅ to C₄₄ or C₅ to C₃₃, or C₅ to C₂₈, or C₁₁ to C₂₈ as measured by gas chromatography (ASTM D2887).

21. The method of any claim 18 to 20, wherein the cold filter plugging point ("CFPP") of the fuel with the components is at least 5°C, 10°C, 20°C, or 30°C lower than the CFPP of the fuel without the components, as measured using ASTM D6371.

22. The use of a fuel additive composition to reduce the cold filter plugging point ("CFPP") of a fuel, wherein the fuel additive composition comprises:

a. 0.2 to 3wt% of an alkylene-coupled C₁₀ to C₆₀ (or C₁₀ to C₄₀, C₁₄ to C₃₂ or C₂₄ to C₂₈) alkylphenol;

b. 10 to 50wt% of a terpolymer;

c. 2 to 10wt% of hydrocarbyl-substituted amine detergent having at least one tertiary amino group; and

d. an optional solvent.

23. The use of claim 22, wherein the fuel comprises at least one fuel that is a diesel fuel, a biodiesel fuel, or combinations thereof.

24. The use of claim 22 or 23, wherein the fuel has a total normal paraffin content of at least 5 to 30wt%, based on a total weight of the fuel and wherein the normal
5 paraffin distribution is between C₅ to C₄₄ or C₅ to C₃₃, or C₅ to C₂₈, or C₁₁ to C₂₈ as measured by gas chromatography (ASTM D2887).

25. The use of any claim 22 to 24, wherein the cold filter plugging point ("CFPP") of the fuel with the additive composition is at least 5°C, 10°C, 20°C, or 30°C lower
10 than the CFPP of the fuel without the additive composition, as measured using ASTM D6371.