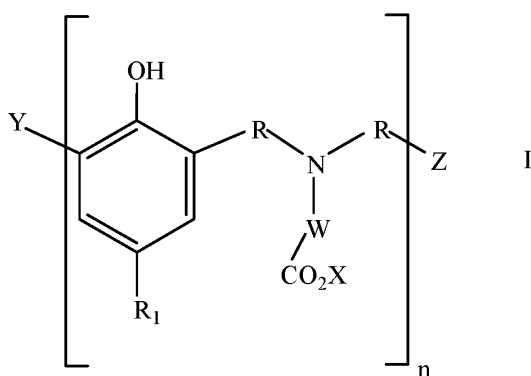


CLAIMS

What is claimed is:

1. A lubricating oil composition contaminated with at least about 0.3 wt% of a biodiesel fuel or a decomposition product thereof, based on the total weight of the lubricating oil composition, wherein the lubricating oil composition comprises:
 - a. a major amount of base oil of lubricating viscosity; and
 - b. a Mannich condensation product.
2. The lubricating oil composition of Claim 1, wherein the Mannich condensation product is prepared by the condensation of:
 - a. a polyisobutyl-substituted hydroxyaromatic compound, wherein the polyisobutyl group is derived from polyisobutene containing at least about 70 wt. % methylvinylidene isomer and has a number average molecular weight of from about 400 to about 2,500,
 - b. an aldehyde,
 - c. an amino acid or ester derivative thereof, and
 - d. an alkali metal base.
3. The lubricating oil composition of Claim 2, wherein the aldehyde is formaldehyde or paraformaldehyde, the alkali metal base is an alkali metal hydroxide and the amino acid is glycine.
4. The lubricating oil composition of Claim 1, wherein the Mannich condensation product is of the formula 7



Formula 7

wherein each R is independently -CHR'-, wherein R' is branched or linear alkyl having one to about 10 carbon atoms, cycloalkyl having from about 3 carbon atoms to about 10 carbon atoms, aryl having from about 6 carbon atoms to about 10 carbon atoms, alkaryl having from about 7 carbon atoms to about 20 carbon atoms, or aralkyl having from about 7 carbon

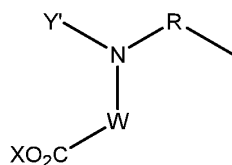
atoms to about 20 carbon atoms, R_1 is a polyisobutyl group derived from polyisobutene containing at least about 70 wt. % methylvinylidene isomer and having a number average molecular weight in the range of about 400 to about 2,500;

X is hydrogen, an alkali metal ion, or alkyl having one carbon atom to about 6 carbon atoms;

W is $-\text{[CHR'']}_m$, wherein each R'' is independently H, alkyl having one carbon atom to about 15 carbon atoms, or a substituted-alkyl having one carbon atom to about 10 carbon atoms and one or more substituents selected from the group consisting of amino, amido, benzyl, carboxyl, hydroxyl, hydroxyphenyl, imidazolyl, imino, phenyl, sulfide, or thiol; and m is an integer from one to 4;

Y is hydrogen, alkyl having one carbon atom to about 10 carbon atoms, $-\text{CHR}'\text{OH}$, wherein R' is as defined above,

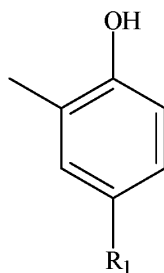
or of formula 8:



Formula 8

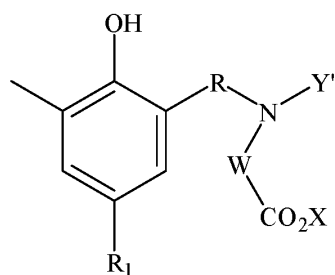
wherein Y' is $-\text{CHR}'\text{OH}$, wherein R' is as defined above; and R, X, and W are as defined above;

Z is hydroxyl, a hydroxyphenyl group of the formula 9:



Formula 9

or of formula 10:



Formula 10

wherein R, R₁, Y', X, and W are as defined above,

and n is an integer from 0 to 20, with the proviso that when n = 0, Z must be of formula 10 as defined above.

5. The lubricating oil composition of Claim 1 further comprising at least one dispersant.
6. The lubricating oil composition of Claim 5, wherein the dispersant is post-treated.
7. The lubricating oil of claim 5, wherein the dispersant is a polysuccinimide.
8. The lubricating oil composition of Claim 1 further comprising at least one additive selected from the group consisting of antioxidants, antiwear agents, detergents, rust inhibitors, demulsifiers, friction modifiers, multi-functional additives, viscosity index improvers, pour point depressants, foam inhibitors, metal deactivators, dispersants, corrosion inhibitors, lubricity improvers, thermal stability improvers, anti-haze additives, icing inhibitors, dyes, markers, static dissipaters, biocides and combinations thereof.
9. The lubricating oil composition of Claim 1, wherein the sulfated ash content of the lubricating oil composition is at most about 2.0 wt.%, based on the total weight of the lubricating oil composition.
10. The lubricating oil composition of Claim 1, wherein the biodiesel fuel comprises an alkyl ester of a long chain fatty acid.
11. The lubricating oil composition of Claim 10, wherein the long chain fatty acid comprises from about 12 carbon atoms to about 30 carbon atoms.
12. The lubricating oil composition of Claim 1, wherein the amount of the biodiesel fuel or decomposition products thereof is present in the lubricating oil composition at from about 0.3 wt.% to about 20 wt.%, based on the total weight of the lubricating oil composition.
13. The lubricating oil composition of Claim 1, wherein the base oil has a kinematic viscosity from about 4 cSt to about 20 cSt at 100 °C.

14. A method of lubricating a diesel engine fueled at least in part with a biodiesel fuel which comprises operating the engine with a lubricating oil composition contaminated with at least about 0.3 wt% of a biodiesel fuel or a decomposition product thereof, based on the total weight of the lubricating oil composition, wherein the lubricating oil composition comprises:
 - a. a major amount of base oil of lubricating viscosity; and
 - b. a Mannich condensation product.
15. A method of inhibiting viscosity increase in a diesel engine fueled at least in part with a biodiesel fuel which comprises operating the engine with a lubricating oil composition contaminated with at least about 0.3 wt% of a biodiesel fuel or a decomposition product thereof, based on the total weight of the lubricating oil composition, wherein the lubricating oil composition comprises:
 - a. a major amount of base oil of lubricating viscosity; and
 - b. a Mannich condensation product.