CLAIMS:

1. A method for preventing or reducing engine knock or pre-ignition in a high compression spark ignition engine lubricated with a lubricating oil by using as the lubricating oil a formulated oil, said formulated oil having a composition comprising a lubricating oil base stock comprising at least one ester selected from the group consisting of 1,1'-(2-butyl-2-ethyl-1,3-propanediyl) bis 3,5,5-trimethyl hexanoate, 3,5,5-trimethylhexyl 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctanoate, 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctyl 3,5,5-trimethylhexanoate, and combinations thereof.

2. The method of claim 1 wherein the formulated oil is an ashless formulated oil.

3. The method of claim 1 wherein the formulated oil further includes at least one ashless antiwear additive selected from the group consisting of an amine phosphate, a thiophosphate, a dithiophosphate, an amine salt of sulfurized phosphate, an alkylated triphenylphosphorothionate, and mixtures thereof.

4. The method of claim 1 wherein the formulated oil further comprises an aminic antioxidant.

5. The method of claim 1 wherein the formulated oil further comprises a polymeric aminic antioxidant.

6. The method of claim 3 wherein the at least one ester is present in an amount of from 1 to 99.8 weight percent, based on the total weight of the formulated oil, and the at least one ashless antiwear additive is present in an amount from 0.1 to 4 weight percent, based on the total weight of the formulated oil.

7. The method of claim 1 wherein the lubricating oil further comprises one or more of a detergent, dispersant, viscosity index improver, antioxidant, pour point depressant, corrosion inhibitor, metal deactivator, seal compatibility additive, anti-foam agent, inhibitor, anti-rust additive, and friction modifier.

8. The method of claim 7 wherein the detergent is an ashless nonionic detergent.

9. The method of claim 1 wherein the high compression spark ignition engine has a compression ratio of at least 12.

10. The method of claim 1 wherein the high compression spark ignition engine is a super-charged engine or a turbo-charged engine.

11. The method of claim 1 wherein the pre-ignition is low speed pre-ignition (LSPI).

12. A lubricating engine oil for high compression spark ignition engines having a composition comprising a lubricating oil base stock comprising at least one ester selected from the group consisting of 1,1'-(2-butyl-2-ethyl-1,3-propanediyl) bis 3,5,5-trimethyl hexanoate, 3,5,5-trimethylhexyl 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctanoate, 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctyl 3,5,5-trimethylhexanoate, and combinations thereof and one or more of a detergent, dispersant, viscosity index improver, antioxidant, pour point depressant, corrosion inhibitor, metal deactivator, seal compatibility additive, anti-foam agent, inhibitor, anti-rust additive, and friction modifier.

13. The lubricating engine of claim 12 wherein the lubricating engine oil is an ashless lubricating engine oil.

14. The lubricating engine oil of claim 12 further including at least one ashless antiwear additive selected from the group consisting of an amine phosphate, a thiophosphate, a dithiophosphate, an amine salt of sulfurized phosphate, an alkylated triphenylphosphorothionate, and mixtures thereof.

15. The lubricating engine oil of claim 12 further comprising an aminic antioxidant.

16. The lubricating engine oil of claim 12 further comprising a polymeric aminic antioxidant.

17. The lubricating engine oil of claim 14 wherein the at least one ester is present in an amount of from 1 to 99.8 weight percent, based on the total weight of the formulated oil, and the at least one ashless antiwear additive is present in an amount from 0.1 to 4 weight percent, based on the total weight of the formulated oil.

18. The lubricating engine oil of claim 12 wherein the detergent is an ashless nonionic detergent.

19. A method of making a lubricating engine oil for high compression spark ignition engines, said method comprising blending a lubricating oil base stock comprising at least one ester selected from the group consisting of 1,1'-(2-butyl-2-ethyl-1,3-propanediyl) bis 3,5,5-trimethyl hexanoate, 3,5,5-trimethylhexyl 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctanoate, 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctyl 3,5,5-trimethylhexanoate, and combinations thereof,

with at least one ashless antiwear additive selected from the group consisting of a phosphorus-containing ashless antiwear additive, a sulfur-containing ashless antiwear additive, and a phosphorus/sulfur-containing ashless antiwear additive.

20. A high compression spark ignition engine lubricated with the lubricating engine oil of claim 12.

21. A method for preventing or reducing engine knock or pre-ignition in a natural gas spark ignition engine lubricated with a lubricating oil by using the lubricating engine oil of claim 12.

22. A method for preventing or reducing engine knock or pre-ignition in a high compression spark ignition engine lubricated with a lubricating oil by using as the lubricating oil a formulated oil, said formulated oil having a composition comprising (i) a lubricating oil base stock comprising at least one ester selected from the group consisting of 1,1'-(2-butyl-2-ethyl-1,3-propanediyl) bis 3,5,5-trimethyl hexanoate, 3,5,5-trimethylhexyl 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctanoate, 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctyl 3,5,5-trimethylhexanoate, and combinations thereof,

and (ii) at least one ashless antiwear additive selected from the group consisting of an amine phosphate, a thiophosphate, a dithiophosphate, an amine salt of sulfurized phosphate, an alkylate phosphorothionate, and mixtures thereof.

23. The method of claim 22 wherein the formulated oil further comprises an alkylated phenyl naphthylamine antioxidant.

24. A lubricating engine oil for high compression spark ignition engines having a composition comprising (i) a lubricating oil base stock comprising at least one ester selected from the group consisting of 1,1'-(2-butyl-2-ethyl-1,3-propanediyl) bis 3,5,5-trimethyl hexanoate, 3,5,5-trimethylhexyl 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctanoate, 2-(4,4-dimethylpentan-2-yl)-5,7,7-trimethyloctyl 3,5,5-trimethylhexanoate, and combinations thereof,

and (ii) at least one ashless antiwear additive selected from the group consisting of an amine phosphate, a thiophosphate, a dithiophosphate, an amine salt of sulfurized phosphate, an alkylated phosphorothionate, or mixtures thereof.

25. The lubricating engine oil of claim 24 further comprising an alkylated phenyl naphthylamine antioxidant.