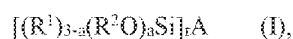


CLAIMS

What is claimed is:

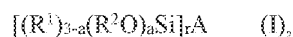
1. A method for preventing or reducing low speed pre-ignition in a direct injected, boosted, spark ignited internal combustion engine, said method comprising the step of lubricating the crankcase of the engine with a lubricating oil composition comprising from about 100 to about 3000 ppm of silicon from at least one silane-containing compound, based on the total weight of the lubricating oil composition.
2. The method of claim 1, wherein the engine is operated under a load with a break mean effective pressure (BMEP) of from about 12 to about 30 bars.
3. The method of claim 1, wherein the engine is operated at speeds between 500 and 3,000 rpm.
4. The method of claim 1, wherein the silane-containing compound has the following generic formula (I):



wherein R^1 is selected from the group consisting of saturated and unsaturated hydrocarbyl and chain-substituted saturated and unsaturated hydrocarbyl; R^2 is selected from the group consisting of hydrogen, saturated and unsaturated hydrocarbyl and chain-substituted saturated and unsaturated hydrocarbyl; a is an integer from 1 to 3, and A is a group of valence r , r being an integer greater than or equal to 1, selected from the group consisting of saturated and unsaturated, linear, branched, or cyclic hydrocarbyl groups, an oxygen atom, or a linear, branched, or cyclic siloxane or polysiloxane group, each of which, except for an oxygen atom, optionally comprises substituents having oxygen, nitrogen, sulfur, or halogen heteroatoms.

5. The method of claim 1, wherein the lubricating oil further comprises a detergent selected from calcium detergents, magnesium detergents, sodium detergents, lithium detergents, and potassium detergents.
6. The method of claim 5, wherein the detergent is a carboxylate, salicylate, phenate, or sulfonate detergent.
7. The method of claim 1, wherein the lubricating oil further comprises a molybdenum containing compound.
8. The method of claim 1, wherein the lubricant composition further comprises at least one other additive selected from an ashless dispersant, an ashless antioxidant, a phosphorus- containing anti-wear additive, a friction modifier, and a polymeric viscosity modifier.
9. The method of claim 1, wherein the engine is fueled with a liquid hydrocarbon fuel, a liquid nonhydrocarbon fuel, or mixtures thereof.
10. The method of claim 1, wherein the engine is fueled by natural gas, liquefied petroleum gas (LPG), compressed natural gas (CNG), or mixtures thereof.
11. Use of at least one silane-containing compound in a lubricating engine oil composition for preventing or reducing low speed pre-ignition in a direct injected, boosted, spark ignited internal combustion engine.
12. Use of claim 11, wherein the at least one silane-containing compound is present in from about 100 to about 3000 ppm of silicon from the at least one silane-containing compound, based on the total weight of the lubricating oil composition.
13. A lubricating engine oil composition for use in a down-sized boosted engine comprising a lubricating oil base stock as a major component; and at least one silane-containing compound, as a minor component; wherein the downsized engine ranges from 0.5 liters to 3.6 liters.

14. The lubricating oil composition of claim 13, wherein the silane-containing compound has the following generic formula (I):



wherein R^1 is selected from the group consisting of saturated and unsaturated hydrocarbyl and chain-substituted saturated and unsaturated hydrocarbyl; R^2 is selected from the group consisting of hydrogen, saturated and unsaturated hydrocarbyl and chain-substituted saturated and unsaturated hydrocarbyl; a is an integer from 1 to 3, and A is a group of valence r , r being an integer greater than or equal to 1, selected from the group consisting of saturated and unsaturated, linear, branched, or cyclic hydrocarbyl groups, an oxygen atom, or a linear, branched, or cyclic siloxane or polysiloxane group, each of which, except for an oxygen atom, optionally comprises substituents having oxygen, nitrogen, sulfur, or halogen heteroatoms.