WHAT IS CLAIMED IS:

1. A lubricating oil composition having a HTHS viscosity at 150°C in a range of 1.3 to 2.9 cP, comprising:
    a) an amount of an oil of lubricating viscosity having a kinematic viscosity at 100°C in a range of 1.5 to 6.0 mm^2/s in excess of 50 wt. % of the lubricating oil composition;
    b) a dispersant polymethacrylate (DPMA) VII having a Mw of from 200,000 g/mol to 450,000 g/mol;
    c) a non-dispersant ethylene-based olefin copolymer viscosity index improver having a Mw of from 50,000 g/mol to 150,000 g/mol and a total ethylene content of 30 wt % to 70 wt %.;
    d) from 200 to 1000 ppm of magnesium from a magnesium containing detergent; and
    wherein the lubricating oil composition is substantially free of molybdenum containing element.

2. The lubricating oil composition of claim 1, further comprising from 1 to 10 wt.%. of an ester base oil.

3. The lubricating oil composition of claim 1, wherein the magnesium containing detergent is a magnesium salicylate derived from a C_{20}-C_{24} isomerized normal alpha olefin.

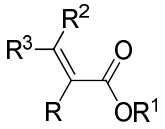
4. The lubricating oil composition of claim 1, wherein the non-dispersant ethylene-based olefin copolymer viscosity index improver has a total ethylene content of 55 to 65 wt. %.

5. The lubricating oil composition of claim 1, wherein the non-dispersant ethylene-based olefin copolymer viscosity index improver has a Mw of from 70,000 g/mol to 110,000 g/mol.

6. The lubricating oil composition of claim 1, wherein the dispersant polymethacrylate (DPMA) VII has a Mw of from 200,000 g/mol to 300,000 g/mol.

7. The lubricating oil composition of claim 1, wherein the dispersant polymethacrylate VII comprise monomer units of:

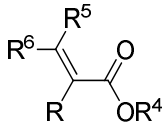
(a) 0 to 40% by weight of one or more ethylenically unsaturated ester compounds of the formula (I):



Formula I

wherein R is hydrogen or methyl, R^1 is a saturated or unsaturated linear or branched alkyl radical having 1 to 5 carbon atoms or a saturated or unsaturated cycloalkyl group having 3 to 5 carbon atoms, R^2 and R^3 are each independently hydrogen or a group of the formula - COOR' wherein R' is hydrogen or a saturated or unsaturated linear or branched alkyl group having 1 to 5 carbon atoms;

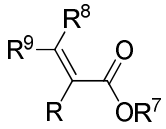
(b) 10 to 98% by weight, preferably 20 to 95% by weight, of one or more ethylenically unsaturated ester compounds of the formula (II)



Formula II

wherein R is hydrogen or methyl, R^4 is a saturated or unsaturated linear or branched alkyl radical having 6 to 15 carbon atoms or a saturated or unsaturated cycloalkyl group having 6 to 15 carbon atoms, R^5 and R^6 are each independently hydrogen or a group of the formula -COOR" in which R" is hydrogen or a saturated or unsaturated linear or branched alkyl group having 6 to 15 carbon atoms;

(c) 0 to 30% by weight, preferably 5 to 20% by weight, of one or more ethylenically unsaturated ester compounds of the formula (III):



Formula III

wherein R is hydrogen or methyl, R^7 is a saturated or unsaturated linear or branched alkyl radical having 16 to 40 preferably 16 to 30, carbon atoms or a cycloalkyl group having 16 to 40, preferably 16 to 30, carbon atoms, R^8 and R^9

are each independently hydrogen or a group of the formula -COOR'" in which R'" is hydrogen or a saturated or unsaturated linear or branched alkyl group having 16 to 40, preferably 16 to 30, carbon atoms;

(d) 0 to 30% by weight of vinyl monomers;

(e) 2 to 10% by weight of at least one N-dispersant monomer.

8. The lubricating oil composition of claim 1, wherein the non-dispersant ethylene-based olefin copolymer is an ethylene propylene copolymer.

9. The lubricating oil composition of claim 1, wherein the magnesium from the magnesium containing detergent is from 200 to 850 ppm.

10. A method of improving friction and reducing wear in an internal combustion engine comprising lubricating said engine with a lubricating oil composition having a HTHS viscosity at 150°C in a range of 1.3 to 2.9 cP, comprising:

a) an amount of an oil of lubricating viscosity having a kinematic viscosity at 100°C in a range of 1.5 to 6.0 mm^2/s in excess of 50 wt. % of the lubricating oil composition;

b) a dispersant polymethacrylate (DPMA) VII having a Mw of from 200,000 g/mol to 450,000 g/mol;

c) a non-dispersant ethylene-based olefin copolymer viscosity index improver having a Mw of from 50,000 g/mol to 150,000 g/mol and a total ethylene content of 30 wt % to 70 wt %.;

d) from 200 to 1000 ppm of magnesium from a magnesium containing detergent; and

wherein the lubricating oil composition is substantially free of molybdenum containing element.

11. The method of claim 10, wherein the lubricating oil composition further comprises from 1 to 10 wt.%. of an ester base oil.

12. The method of claim 10, wherein the magnesium containing detergent is a magnesium salicylate derived from a C_{20}-C_{24} isomerized normal alpha olefin.

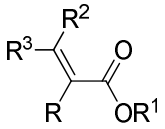
13. The method of claim 10, wherein the non-dispersant ethylene-based olefin copolymer viscosity index improver has a total ethylene content of 55 to 65 wt. %.

14. The method of claim 10, wherein the non-dispersant ethylene-based olefin copolymer viscosity index improver has a Mw of from 70,000 g/mol to 110,000 g/mol.

15. The method of claim 10, wherein the dispersant polymethacrylate (DPMA) VII has a Mw of from 200,000 g/mol to 300,000 g/mol.

16. The method of claim 10, wherein the wherein the dispersant polymethacrylate VII comprises monomer units of:

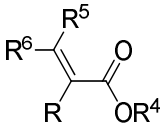
(a) 0 to 40% by weight of one or more ethylenically unsaturated ester compounds of the formula (I):



Formula I

wherein R is hydrogen or methyl, R^1 is a saturated or unsaturated linear or branched alkyl radical having 1 to 5 carbon atoms or a saturated or unsaturated cycloalkyl group having 3 to 5 carbon atoms, R^2 and R^3 are each independently hydrogen or a group of the formula - COOR' wherein R' is hydrogen or a saturated or unsaturated linear or branched alkyl group having 1 to 5 carbon atoms;

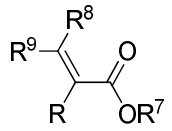
(b) 10 to 98% by weight, preferably 20 to 95% by weight, of one or more ethylenically unsaturated ester compounds of the formula (II)



Formula II

wherein R is hydrogen or methyl, R^4 is a saturated or unsaturated linear or branched alkyl radical having 6 to 15 carbon atoms or a saturated or unsaturated cycloalkyl group having 6 to 15 carbon atoms, R^5 and R^6 are each independently hydrogen or a group of the formula -COOR" in which R" is hydrogen or a saturated or unsaturated linear or branched alkyl group having 6 to 15 carbon atoms;

(c) 0 to 30% by weight, preferably 5 to 20% by weight, of one or more ethylenically unsaturated ester compounds of the formula (III):



Formula III

wherein R is hydrogen or methyl, R^7 is a saturated or unsaturated linear or branched alkyl radical having 16 to 40 preferably 16 to 30, carbon atoms or a cycloalkyl group having 16 to 40, preferably 16 to 30, carbon atoms, R^8 and R^9 are each independently hydrogen or a group of the formula -COOR'" in which R'" is hydrogen or a saturated or unsaturated linear or branched alkyl group having 16 to 40, preferably 16 to 30, carbon atoms;

(d) 0 to 30% by weight of vinyl monomers;

(e) 2 to 10% by weight of at least one N-dispersant monomer.

17. The method of claim 10 wherein the non-dispersant ethylene-based olefin copolymer is an ethylene propylene copolymer.

18. The method of claim 10, wherein the magnesium from the magnesium containing detergent is from 200 to 850 ppm.