WHAT IS CLAIMED IS:

1. A polymer suitable for a viscosity modifier in lubricating oil compositions, the polymer comprising:

about 88 to about 96 mole percent of alkyl (meth)acrylate monomer units including at least short chain alkyl (meth)acrylate monomer units with an alkyl chain length of 1 to 4 carbons and long chain alkyl (meth)acrylate monomer units with an alkyl chain length of 12 to 20 carbons, wherein an alkyl molar ratio of the long chain alkyl (meth)acrylate monomer units to the short chain alkyl (meth)acrylate monomer units is greater than 2.0 and less than 5.5;

about 1 to about 6 mole percent of 2-hydroxyethyl (meth)acrylate monomer units; and

a weight average molecular weight of about 100 kg/mol to about 500 kg/mol.

2. The polymer of claim 1, wherein the polymer includes about 15 to about 30 mole percent of the short chain alkyl (meth)acrylate monomer units and about 58 to about 81 mole percent of the long chain alkyl (meth)acrylate monomer units.

3. The polymer of claim 1, wherein the alkyl (meth)acrylate monomer units include both methyl (meth)acrylate and lauryl (meth)acrylate and wherein the polymer includes up to about 95 mole percent of the methyl (meth)acrylate and the lauryl (meth)acrylate combined.

4. The polymer of claim 3, wherein the (meth)acrylate ratio of the sum of the mole percent of the methyl (meth)acrylate monomer units and the lauryl (meth)acrylate monomer units to the mole percent of the 2-hydroxyethyl (meth)acrylate monomer units is greater than about 14.

5. The polymer of claim 4, wherein the (meth)acrylate ratio is about 16 to about 20 and the polymer has a viscosity index of about 280 or greater.

6. The polymer of claim 1, wherein the polymer comprises about 5 to about 6 mole percent of the 2-hydroxyethyl (meth)acrylate monomer units.

7. The polymer of claim 3, wherein the alkyl (meth)acrylate monomer units further include one or more of butyl (meth)acrylate monomer units or longer chain alkyl (meth)acrylate monomer units having an alkyl chain length of 16 to 20 carbons and wherein the polymer includes no more than 15 mole percent of the butyl (meth)acrylate and no more than about 7.5 mole percent of the alkyl (meth)acrylate having an average alkyl chain length

of 16 to 20 carbons.

8. The polymer of claim 1, wherein the polymer is free of alkyl (meth)acrylate monomer units with alkyl chain lengths from 5 to 9 carbons.

9. The polymer of claim 1, wherein the polymer has a weight average molecular weight of at least about 150 kg/mole.

10. The polymer of claim 1, wherein the polymer has a weight average molecular weight of at least about 200 kg/mole.

11. The polymer of claim 1, wherein the polymer includes about 15 to about 30 mole percent of methyl (meth)acrylate, about 60 to about 75 mole percent of lauryl (meth)acrylate, about 0 to about 15 mole percent of butyl (meth)acrylate, about 0 to about 7.5 mole percent of longer chain alkyl (meth)acrylate having an alkyl chain length of 16 to 20 carbons; and about 0 to about 7.5 mole percent of dispersant monomer units.

12. The polymer of claim 1, further comprising a polydispersity index of about 1.5 to about 4.0.

13. A lubricant oil composition comprising:

greater than 50% by weight of a base oil;

about 1 to about 7.5 weight percent of a viscosity index improver including a (meth)acrylate polymer having as polymerized monomer units thereof about 88 to about 96 mole percent of alkyl (meth)acrylate monomer units including both short chain alkyl (meth)acrylate monomer units having an alkyl chain length of 1 to 4 carbons and long chain alkyl (meth)acrylate monomer units having an alkyl chain length of 12 to 20 carbons, and about 1 to about 6 mole percent of 2-hydroxyethyl (meth)acrylate monomer units;

wherein an alkyl molar ratio of the long chain alkyl (meth)acrylate monomer units to the short chain alkyl (meth)acrylate monomer units is greater than 2.0 and less than 5.5; and wherein the (meth)acrylate polymer has a weight average molecular weight of about 100 kg/mol to about 500 kg/mol.

14. The lubricant oil composition of claim 13, wherein the (meth)acrylate polymer includes about 15 to about 30 mole percent of the short chain alkyl (meth)acrylate monomer units and about 58 to about 81 of the long chain alkyl (meth)acrylate monomer units.

15. The lubricant oil composition of claim 14, wherein the alkyl (meth)acrylate monomer units include both methyl (meth)acrylate monomer units and lauryl (meth)acrylate monomer units and wherein the (meth)acrylate polymer includes up to about 95 mole percent of the methyl (meth)acrylate and the lauryl (meth)acrylate monomer units combined.

16. The lubricant oil composition of claim 15, wherein the (meth)acrylate ratio of the sum

of the mole percent of the methyl (meth)acrylate monomer units and the lauryl (meth)acrylate monomer units to the mole percent of the 2-hydroxyethyl (meth)acrylate monomer units is greater than about 14.

17. The lubricant oil composition of claim 16, wherein the molar (meth)acrylate ratio is greater than 14 to about 20 and the polymer (meth)acrylate has a viscosity index of about 280 or greater.

18. The lubricant oil composition of claim 13, wherein the (meth)acrylate polymer includes about 5 to about 6 mole percent of the 2-hydroxyethyl (meth)acrylate monomer units.

19. The lubricant oil composition of claim 13, wherein the alkyl (meth)acrylate monomer units further includes one or more of butyl (meth)acrylate monomer units and longer chain alkyl (meth)acrylate monomer units having an alkyl chain length of 16 to 20 carbons and wherein the (meth)acrylate polymer includes no more than 15 mole percent of the butyl (meth)acrylate monomer units and no more than about 7.5 mole percent of the longer chain alkyl (meth)acrylate monomer units having an alkyl chain length of 16 to 20 carbons.

20. The lubricant oil composition of claim 13, wherein the (meth)acrylate polymer includes about 15 to about 30 mole percent of methyl (meth)acrylate, about 60 to about 75 mole percent of lauryl (meth)acrylate, about 0 to about 15 mole percent of butyl (meth)acrylate, about 0 to about 7.5 mole percent of longer chain alkyl (meth)acrylate having an alkyl chain length of 16 to 20 carbons; and about 0 to about 7.5 mole percent of dispersant monomer units.

21. The lubricant oil composition of claim 13, wherein the polymer is free of alkyl (meth)acrylate monomer units with an alkyl chain length from 5 to 9 carbons.

22. The lubricant oil composition of claim 13, wherein the polymer has a weight average molecular weight of at least about 150 kg/mole.

23. The lubricant oil composition of claim 13, wherein the polymer has a weight average molecular weight of at least about 200 kg/mole.

24. The lubricant oil composition of claim 13, wherein the (meth)acrylate polymer has a polydispersity index of about 1.5 to about 4.