CLAIMS

1. A random liquid polyalpha-olefin containing at least two types of branches, with a first branch comprising a C_3 to C_7 alpha-olefin and a second branch comprising a C_{12} to C_{20} alpha-olefin, further characterized by at least one of the parameters selected from

   (a) randomness factor between 0.7 and 1.4 determined by mass spectrometry;

   (b) a minimized Diff factor of less than 0.3 for the $S_{\alpha\alpha}$ methylene peak, determined by NMR;

   (c) M_n = 200-50,000;

   (d) M_w = 200-80,000;

   (e) MWD = 1 to 5;

   (f) a pour point less than 10°C;

   (g) a KV at 100°C = 1.5 to 5,000; and

   (h) a VI greater than or equal to 100.

2. The random liquid polyalpha-olefin of claim 1, wherein:

   (a) the first branch comprises propylene, 1-butene, 1-pentene, 1-hexene, or 1-heptene; and

   (b) the second branch comprises a C_{12} to C_{18} alpha-olefin.

3. The random liquid polyalpha-olefin of claim 1, wherein:

   (a) the first branch comprises 1-hexene; and

   (b) the second branch comprises 1-dodecene or 1-tetradecene.

4. The random liquid polyalpha-olefin of claim 1, wherein:

   (a) the first branch comprises 1-butene; and

   (b) the second branch comprises 1-dodecene or 1-tetradecene.

5. The random liquid polyalpha-olefin of claim 1, characterized by an average branch length ranging from 2.1 to 12.

6. The random liquid polyalpha-olefin of claim 1, characterized by an average branch length ranging from 7 to 8.

7. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least two of the parameters selected from (a) through (h).

8. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least three of the parameters selected from (a) through (h).

9. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least four of the parameters selected from (a) through (h).

10. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least five of the parameters selected from (a) through (h).

11. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least six of the parameters selected from (a) through (h).

12. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by at least seven of the parameters selected from (a) through (h).

13. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by all of the parameters (a) through (h).

14. The random liquid polyalpha-olefin of any one of claims 1 to 6, characterized by an average branch length of from 3 to 10.

15. A lubricant comprising 1 wt% to 95 wt% of at least one random liquid polyalpha-olefin according to any one of claim 1 to 14.

16. The lubricant of claim 15, further comprising a second basestock selected from the group consisting of API Groups I, II, III, IV or V, or a Fischer-Tropsch hydrocarbon derived lubricants.

17. The lubricant of claim 16, characterized by a pour point of less than -20°C.

18. The use of a random liquid polyalpha-olefin according to any one of claims 1 to 14 in a fully formulated lubricant.

19. The use of a lubricant according to any one of claims 15 to 17 in a gear or an apparatus comprising roller bearings.

20. The use of a lubricant according to any one of claims 15 to 17 in an engine lubricant in automobile, ship or gas turbine.