CLAIMS

What is claimed is:

1. A composition comprising:
   a) a chromium catalyst precursor; and
   b) about 10% to about 95 % by weight of an olefinic diluent having between 6 and 18 carbon atoms.
2. The composition of Claim 1, wherein the composition does not comprise a metal alkyl compound.
3. The composition of Claims 1 or 2, wherein the composition comprises a nitrogen containing compound.
4. The composition of any of Claims 1 through 3, wherein the composition comprises from about 18 % to about 80 % by weight of the olefinic diluent.
5. The composition of any of Claims 1 through 4, wherein the composition comprises from about 25 % to about 55 % by weight of the olefinic diluent.
6. The composition of any of Claims 1 through 5, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) organometallic compound.
7. The composition of any of Claims 1 through 6, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) acetonate or carboxylate.
8. The composition of any of Claims 1 through 7, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) carboxylate wherein each carboxylate is a $C_4$to C_{19} carboxylate.
9. The composition of any of Claims 1 through 8, wherein the chromium catalyst precursor is chromium (III) 2-ethylhexanoate.
10. The composition of any of Claims 1 through 9, wherein the olefinic diluent is an alpha olefin.
11. The composition of any of Claims 1 through 10, wherein the olefinic diluent is selected from the group consisting of 1-decene, 1-dodecene, 1-tetradecene, and mixtures thereof.
12. The composition of any of Claims 1 through 11, wherein the olefinic diluent is 1-decene or 1-dodecene.
13. The composition of Claim 1, wherein the chromium catalyst precursor is a chromium(III) carboxylate wherein each carboxylate is a $C_4$to C_{19} carboxylate, the olefinic diluent consists

essentially of a C_{10} to C_{14} normal alpha olefin, and the composition comprise from 25 % to 55 % of the olefinic diluent.

14. An oligomerization catalyst system comprising the composition of any of Claims 1 through 13.

15. A composition comprising:
    a) a chromium catalyst precursor; and
    b) an olefinic diluent having between 6 and 18 carbon atoms, wherein the weight ratio of diluent to the chromium atom in the precursor ranges from 13:1 to 44:1.

16. The composition of Claim 15, wherein the composition does not comprise a metal alkyl compound.

17. The composition of Claims 15 or 16, wherein the composition comprises a nitrogen containing compound.

18. The composition of any of Claims 15 through 17, wherein the weight ratio of the organic diluent to the chromium atom ranges from 16:1 to 28:1.

19. The composition of any of Claims 15 through 18, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) organometallic compound.

20. The composition of any of Claims 15 through 19, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) acetonate or carboxylate.

21. The composition of any of Claims 15 through 20, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) carboxylate wherein each carboxylate is a $C_4$to C_{19} carboxylate.

22. The composition of any of Claims 15 through 21, wherein the chromium catalyst precursor is chromium (III) 2-ethylhexanoate.

23. The composition of any of Claims 15 through 22, wherein the olefinic diluent is an alpha olefin.

24. The composition of any of Claims 15 through 23, wherein the olefinic diluent is selected from the group consisting of 1-decene, 1-dodecene, 1-tetradecene, and mixtures thereof.

25. The composition of any of Claims 15 through 24, wherein the olefinic diluent is 1-decene or 1-dodecene.

26. The composition of Claim 15, wherein the chromium catalyst precursor is a chromium(III) carboxylate wherein each carboxylate is a $C_4$to C_{19} carboxylate, the olefinic diluent consists

essentially of a C_{10} to C_{14} normal alpha olefin, and the weight ratio of the olefinic diluent to the chromium atom ranges from 16:1 to 28:1.

27. An oligomerization catalyst system comprising the composition of any of Claims 15 through 26.

CLAIMS

1. A composition comprising:

   a) a chromium catalyst precursor, which chromium catalyst precursor is a chromium (II) or chromium (III) organometallic compound; and
   b) an olefinic diluent having between 6 and 18 carbon atoms, wherein the weight ratio of diluent to the chromium atom in the precursor ranges from 13:1 to 44:1; and wherein the composition does not comprise a metal alkyl compound.

2. The composition of Claim 1, wherein the composition comprises a nitrogen containing compound.

3. The composition of Claims 1 or 2, wherein the weight ratio of the organic diluent to the chromium atom ranges from 16:1 to 28:1.

4. The composition of any of Claims 1 through 3, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) acetonate or carboxylate.

5. The composition of any of Claims 1 through 4, wherein the chromium catalyst precursor is a chromium (II) or chromium (III) carboxylate wherein each carboxylate is a C_4 to C_{19} carboxylate.

6. The composition of any of Claims 1 through 5, wherein the chromium catalyst precursor is chromium (III) 2-ethylhexanoate.

7. The composition of any of Claims 1 through 6, wherein the olefinic diluent is an alpha olefin.

8. The composition of any of Claims 1 through 7, wherein the olefinic diluent is selected from the group consisting of 1-decene, 1-dodecene, 1-tetradecene, and mixtures thereof.

9. The composition of any of Claims 1 through 8, wherein the olefinic diluent is 1-decene or 1-dodecene.

10. The composition of Claim 1, wherein the chromium catalyst precursor is a chromium(III) carboxylate wherein each carboxylate is a C_4 to C_{19} carboxylate, the olefinic diluent consists essentially of a C_{10} to C_{14} normal alpha olefin, and the weight ratio of the olefinic diluent to the chromium atom ranges from 16:1 to 28:1.