CLAIMS:

1. A process for the tetramerisation of ethylene, the process including contacting ethylene with a catalyst under ethylene oligomerisation conditions, said catalyst comprising:

i) a source of chromium;

ii) a ligating compound of the formula

$(R^1)_mAXY$

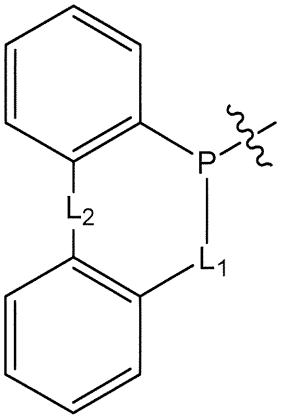
wherein A is selected from the group consisting of nitrogen, phosphorus, and oxygen;

X is a linking group between A and Y;

m is independently 1 or 2;

R^1 is a hydrogen, a hydrocarbyl group, an organoheteryl group or a heterohydrocarbyl group with each R^1 being the same or being different where m is 2; and

Y is comprising:



such that P is a phosphorous atom and bonds to X; and

L_1 and L_2 are linkers selected from the group comprising a covalent bond, a heteroatom, a substituted heteroatom, -C(=O)-, -CR^3R^4-, where R^3 and R^4 are independently a hydrogen, a hydrocarbyl group, a heterohydrocarbyl group or an organoheteryl group; and

iii) optionally a catalyst activator or combination of catalyst activators.

2. The process as claimed in claim 1, wherein A is selected from the group consisting of nitrogen and phosphorous.

3. The process as claimed in claim 1 or claim 2, wherein R^1 is a hydrocarbyl group, an organoheteryl group or a heterohydrocarbyl group.

4. The process as claimed in any one of the preceding claims, wherein R^1 is an aromatic, including a heteroaromatic, group directly bonded to A.

5. The process as claimed in any one of the preceding claims, wherein R^1 is a phenyl group.

6. A process for the tetramerisation of ethylene, the process including contacting ethylene with a catalyst under ethylene oligomerisation conditions, said catalyst comprising:

i) a source of chromium;

ii) a ligating compound of the formula

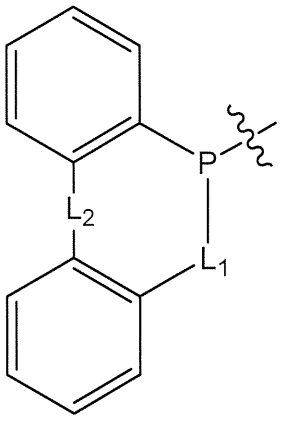
$$R^1R^2PXY$$

wherein P is a phosphorous atom;

X is a linking group between P and Y;

R^1 and R^2 are independently a hydrocarbyl group, an organoheteryl group or a heterohydrocarbyl group; and

Y is comprising:



such that P is a phosphorous atom which bonds to X; and

L_1 and L_2 are linkers selected from the group comprising a covalent bond, a heteroatom, a substituted heteroatom, -C(=O)-, $-CR^3R^4-$, where R^3 and R^4 are independently a hydrogen, a hydrocarbyl group, a heterohydrocarbyl group or an organoheteryl group; and

iii) optionally a catalyst activator or combination of catalyst activators.

7. The process as claimed in claim 6, wherein R^1 and R^2 are independently a hydrocarbyl group or a heterohydrocarbyl group.

8. The process as claimed in claim 6 or claim 7, wherein both R^1 and R^2 are aromatic, including heteroaromatic, groups directly bonded to P.

9. The process as claimed in any one of claims 6 to 8, wherein both R^1 and R^2 are phenyl groups.

10. The process as claimed in any one of the preceding claims, wherein L_1 and L_2 can be selected from the group comprising a covalent bond, -O-, -S-, $-NR_3-$, $-P(=O)R^3-$, $-P(=Se)R^3-$, $-P(=S)R^3-$ $-SiR^3R^4-$, $-CR^3R^4-$, -C(=O)- where R^3 and R^4 are independently a hydrogen, a hydrocarbyl group, a heterohydrocarbyl group or an organoheteryl group.

11. The process as claimed in any one of the preceding claims, wherein L_1 and L_2 are either a covalent bond or –O-.

12. The process as claimed in any one of the preceding claims, wherein both of L_1 and L_2 are covalent bonds.

13. The process as claimed in any one of the preceding claims, wherein Y is substituted at one or more of the aromatic ring positions with groups other than hydrogen including hydrocarbyl groups, heterohydrocarbyl or organoheteryl groups or halogen atom substituents.

14. A process according to any one of the preceding claims wherein X is a hydrocarbylene, $–N(R^5)-$, $-N(R^5)-N(R^6)-$, $=C(R^7)-N(R^5)-$, $-N(R^5)-C(R^7)(R^8)-$, $N(R^5)-X^1-N(R^6)$ where R^5 and R^6 are independently a hydrocarbyl group, an organoheteryl group or a heterohydrocarbyl group, R^7 and R^8 are independently a hydrogen, a hydrocarbyl group, an organoheteryl group or a heterohydrocarbyl group, and X^1 is a hydrocarbylene group.