CLAIMS:

[Claim 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

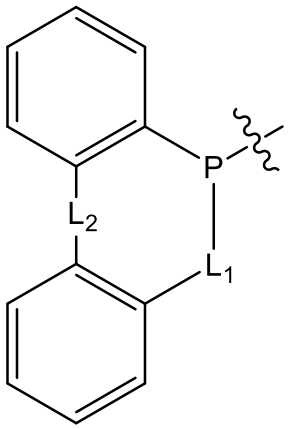
R^1R^2PXY

wherein P is a phosphorous atom;

X is a linking group between P and Y, wherein X is hydrocarbylene, heterohydrocarbylene, $–N(R^5)-$, $-N(R^5)-N(R^6)-$, $-N(R^5)-C(R^7)(R^8)-$, 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;

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

Y is an optionally substituted group that is represented as



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

L_1 and L_2 are linkers selected from the group consisting of a covalent bond and an optionally substituted single atom bonded to both of the linked carbon or phosphorous atoms wherein the optionally substituted single atom is selected from the group consisting of 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-, and -C(=O)- where R^3 and R^4 are independently a hydrogen, a hydrocarbyl group, a heterohydrocarbyl group or an organoheteryl group;

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

[Claim 2]. The process as claimed in claim 1, wherein both R^1 and R^2 are aromatic, including heteroaromatic, groups directly bonded to P.

[Claim 3]. The process as claimed in claim 1 or claim 2, wherein both R^1 and R^2 are optionally substituted phenyl groups.

[Claim 4]. The process as claimed in any one of the preceding claims, wherein L_1 and L_2 are either a covalent bond or –O-.

[Claim 5]. The process as claimed in any one of the preceding claims, wherein both of L_1 and L_2 are covalent bonds.

[Claim 6]. The process as claimed in any one of the preceding claims, wherein Y is optionally 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.