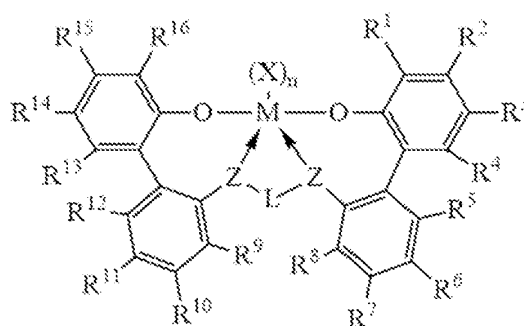


CLAIMS

1. A process comprising:
 providing a purge stream comprising octene monomer;
 contacting, under polymerization conditions, the purge stream with a bis-biphenylphenoxy catalyst; and
 forming an octene polymer having an absolute weight average molecular weight ($Mw_{(Abs)}$) greater than 1,300,000 g/mol and a $Mw_{(Abs)}/Mn_{(Abs)}$ from 1.3 to 3.0.
2. The process of claim 1 comprising contacting the purge stream with a bis-biphenylphenoxy catalyst having the formula (I)

formula (I)



wherein

M is a metal selected from zirconium or hafnium, the metal being in a formal oxidation state of +2, +3, or +4;

n is an integer of from 0 to 3, and wherein when n is 0, X is absent; and

each X independently is a monodentate ligand that is neutral, monoanionic, or dianionic; or two X s are taken together to form a bidentate ligand that is neutral, monoanionic, or dianionic; and X and n are chosen in such a way that the metal-ligand complex of formula (I) is, overall, neutral; and

each Z independently is O , S , $N(C_1-C_{40})$ hydrocarbyl, or $P(C_1-C_{40})$ hydrocarbyl; and

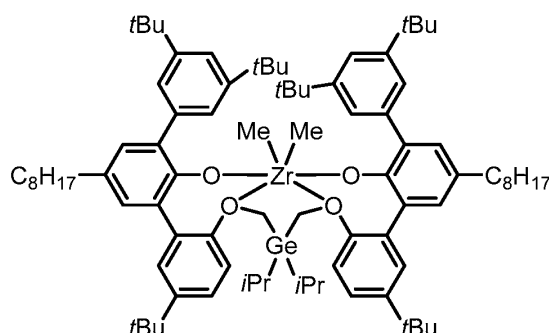
O is O (an oxygen atom);

L is (C₁-C₄₀)hydrocarbylene or (C₁-C₄₀)heterohydrocarbylene, wherein the (C₁-C₄₀)hydrocarbylene has a portion that comprises a 1-carbon atom to 10-carbon atom linker backbone linking the two Z groups in formula (I) (to which L is bonded) or the (C₁-C₄₀)heterohydrocarbylene has a portion that comprises a 1-atom to 10-atom linker backbone linking the two Z groups in formula (I), wherein each of the 1 to 10 atoms of the 1-atom to 10-atom linker backbone of the (C₁-C₄₀)heterohydrocarbylene independently is a carbon atom or heteroatom, wherein each heteroatom independently is O, S, S(O), S(O)₂, Si(R^C)₂, Ge(R^C)₂, P(R^C), or N(R^C), wherein independently each R^C is (C₁-C₃₀)hydrocarbyl or (C₁-C₃₀) heterohydrocarbyl; and

each R¹⁻¹⁶ is selected from (C₁-C₄₀)hydrocarbyl, (C₁-C₄₀)heterohydrocarbyl, Si(R^C)₃, Ge(R^C)₃, P(R^C)₂, N(R^C)₂, OR^C, SR^C, NO₂, CN, CF₃, R^CS(O), R^CS(O)₂, (R^C)₂C=N, R^CC(O)O, R^COC(O), R^CC(O)N(R), (R^C)₂NC(O), halogen atom, hydrogen atom, and combinations thereof.

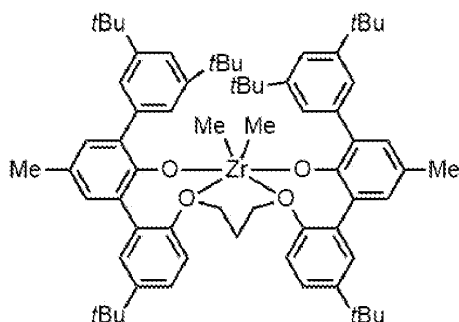
3. The process of any of claims 1-2 comprising providing a purge stream composed of from 20 wt% to 50 wt% 1-octene, from 10 wt% to 50 wt% solvent, and from 10 wt% to 70 wt% octene isomers.
4. The process of claim 3 comprising removing, before the contacting, any ethylene present in the purge stream; and providing a purge stream comprising from 0 wt% to less than 0.01 wt% ethylene.
5. The process of any of claims 1-4 comprising contacting the purge stream with a bis-biphenylphenoxy catalyst having the formula (V)

formula (V)



6. The process of any of claims 1-4 comprising contacting the purge stream with a bis-biphenylphenoxy catalyst having the formula (VI)

formula (VI)



7. A composition comprising:
 an octene homopolymer having an absolute weight average molecular weight ($Mw_{(Abs)}$) greater than 1,300,000 g/mol and a $Mw_{(Abs)}/Mn_{(Abs)}$ from 1.3 to 3.0; and
 a solvent.
8. The composition of claim 7 wherein the octene homopolymer comprises from 0 ppm to less than 10 ppm titanium.
9. The composition of any of claims 7-8 wherein the octene homopolymer comprises a residual amount of zirconium.

10. The composition of any of claims 7-9 wherein the octene homopolymer comprises a residual amount of germanium.
11. The composition of any of claims 7-10 wherein the composition comprises
- (i) from 10 wt% to 50 wt% octene homopolymer;
 - (ii) from 0 wt% to 70 wt% octene isomers;
 - (iii) from 90 wt% to 10 wt% of the solvent; and (i), (ii), (iii) amount to 100 wt% of the composition.
12. The composition of any of claims 7-11 comprising
- from 80 wt% to 95 wt% of the octene homopolymer; and
 - from 20 wt% to 5 wt% of the solvent.
13. The composition of any of claims 7-12 wherein the composition comprises
- (i) from 35 wt% to 45 wt% octene homopolymer;
 - (ii) from 65 wt % to 55 wt% solvent wherein (i) and (ii) amount to 100 wt% of the composition, and
- the composition has a viscosity from $2.9014 \times 10^{+05}$ m-Pas to $3.573 \times 10^{+07}$ m-Pas.