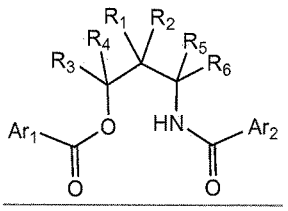
7. The halogenated amide ester of any of claims 1-6 wherein each of R_3 and R_5 is a hydrocarbyl group having 1 to 6 carbon atoms.

8. A procatalyst composition comprising:

a combination of a magnesium moiety precursor selected from the group consisting of anhydrous magnesium chloride, an alcohol adduct of magnesium chloride, magnesium alkoxide, magnesium aryloxide, mixed magnesium alkoxy halide, carbonated magnesium dialkoxide and carbonated magnesium aryloxide, a titanium ~~moiety~~ halide and an internal electron donor comprising a halogenated amide ester, having the structure (I)

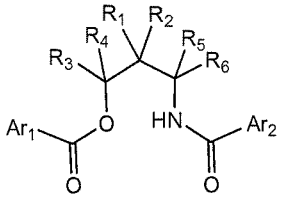


(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, a halogen, and an acyclic alkyl group having 1-20 carbon atoms, and at least one of R_1-R_6 is an acyclic alkyl group; and

Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms, and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated.

9. The procatalyst composition of claim 8 wherein the halogenated amide ester has the structure (I)



(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, halogen, a hydrocarbyl group having 1-20 carbon atoms, and a substituted hydrocarbyl group having 1-20 carbon atoms; and

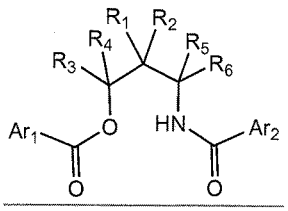
Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated.

10. The procatalyst composition of any of claims 8-9 comprising a benzoate.

11. A catalyst composition comprising;

a procatalyst composition comprising an internal electron donor comprising a halogenated amide ester~~; and~~

~~a cocatalyst.~~ having the structure (I)



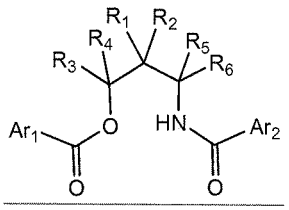
(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, a halogen, and an acyclic alkyl group having 1-20 carbon atoms, and at least one of R_1-R_6 is an acyclic alkyl group; and

Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms, and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated;

and a cocatalyst.

12. The catalyst composition of claim 11 wherein the halogenated amide ester has the structure (I)



(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, halogen, a hydrocarbyl group having 1-20 carbon atoms, and a substituted hydrocarbyl group having 1-20 carbon atoms; and

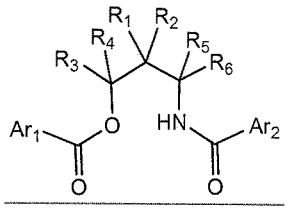
Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated.

~~12~~13. The catalyst composition of any of claims 11-12 comprising an external electron donor selected from the group consisting of a silicon compound, a bidentate compound, a diether, a diol ester, a carboxylate, an amine, a phosphite, and combinations thereof.

~~13~~14. The catalyst composition of any of claims 11-~~12~~-13 comprising an activity limiting agent selected from the group consisting of a carboxylic acid ester, a diether, a diol ester, and combinations thereof.

~~14~~15. A process for producing an olefin-based polymer comprising:

contacting, under polymerization conditions, an olefin with a catalyst composition comprising a halogenated amide ester having a structure (I)



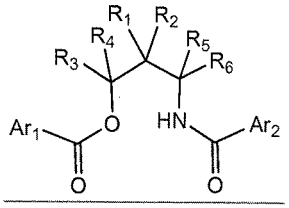
(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, a halogen, and an acyclic alkyl group having 1-20 carbon atoms, and at least one of R_1-R_6 is an acyclic alkyl group; and

Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms, and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated; and

forming an olefin-based polymer comprising the~~a~~ halogenated amide ester.

16. The process of claim 15 wherein the halogenated amide ester has the structure (I)



(I)

wherein R_1-R_6 are the same or different, each of R_1-R_6 is selected from the group consisting of hydrogen, halogen, a hydrocarbyl group having 1-20 carbon atoms, and a substituted hydrocarbyl group having 1-20 carbon atoms; and

Ar_1 and Ar_2 are the same or different and each of Ar_1 and Ar_2 is selected from the group consisting of an aryl group having 6-20 carbon atoms and an arylalkyl group having 7-20 carbon atoms, and at least one of Ar_1 and Ar_2 is halogenated.

~~15~~17. The process of any of claims ~~14~~ 15 or 16 wherein the olefin is propylene, the process comprising forming a propylene-based polymer having a polydispersity index from about 5.0 to about 20.0.