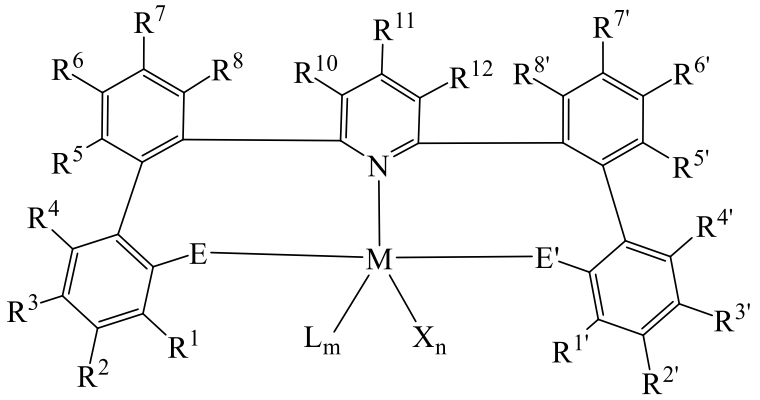
CLAIMS

What is claimed is:

1. A polymerization process comprising contacting in a homogeneous phase, propylene with a catalyst system comprising activator and catalyst compound represented by the Formula (**II**):



(**II**)

wherein:

M is a group 3, 4, 5, or 6 transition metal or a Lanthanide;

E and E' are each independently O, S, or NR^9, where R^9 is independently hydrogen, a C_1-C_{40} hydrocarbyl, a C_1-C_{40} substituted hydrocarbyl, or a heteroatom-containing group;

each L is independently a Lewis base;

each X is independently an anionic ligand;

n is 1, 2 or 3;

m is 0, 1, or 2;

n+m is not greater than 4;

each of R^2, R^3, R^4, $R^{2'}$, $R^{3'}$, and $R^{4'}$ is independently hydrogen, C_1-C_{40} hydrocarbyl, C_1-C_{40} substituted hydrocarbyl, a heteroatom or a heteroatom-containing group, each of R^1 and $R^{1'}$ are adamantan-1-yl or substituted adamantan-1-yl;

any two L groups may be joined together to form a bidentate Lewis base;

an X group may be joined to an L group to form a monoanionic bidentate group;

any two X groups may be joined together to form a dianionic ligand group;

each of R^5, R^6, R^7, R^8, $R^{5'}$, $R^{6'}$, $R^{7'}$, $R^{8'}$, R^{10}, R^{11}, and R^{12} is independently hydrogen, a C_1-C_{40} hydrocarbyl, a C_1-C_{40} substituted hydrocarbyl, a heteroatom or a heteroatom-containing group, or one or more of R^5 and R^6, R^6 and R^7, R^7 and R^8, $R^{5'}$ and $R^{6'}$, $R^{6'}$ and $R^{7'}$, $R^{7'}$ and $R^{8'}$, R^{10} and R^{11}, or R^{11} and R^{12} may be joined to form one or more substituted hydrocarbyl rings, unsubstituted hydrocarbyl rings, substituted heterocyclic rings, or unsubstituted heterocyclic

rings each having 5, 6, 7, or 8 ring atoms, and where substitutions on the ring can join to form additional rings;

obtaining propylene polymer.

2. The process of claim 1 wherein the M is Hf, Zr or Ti.

3. The process of claim 1 or 2 wherein E and E' are each O.

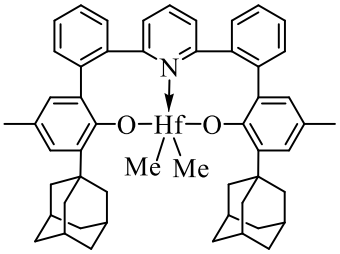
4. The process any of claims 1 to 3 wherein each X is, independently, selected from the group consisting of substituted or unsubstituted hydrocarbyl radicals having from 1 to 30 carbon atoms, substituted or unsubstituted silylcarbyl radicals having from 3 to 30 carbon atoms, hydrides, amides, alkoxides, sulfides, phosphides, halides, substituted benzyl radicals having from 8 to 30 carbon atoms, and a combination thereof, optionally two X's may form a part of a fused ring or a ring system.

5. The process any of claims 1 to 4 wherein each L is, independently, selected from the group consisting of: ethers, thioethers, amines, phosphines, ethyl ether, tetrahydrofuran, dimethylsulfide, triethylamine, pyridine, alkenes, alkynes, allenes, and carbenes and a combinations thereof, optionally two or more L's may form a part of a fused ring or a ring system.

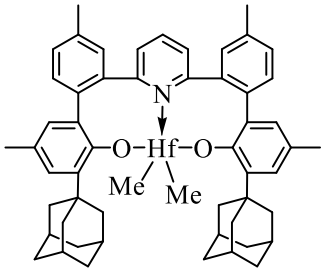
6. The process of claim 1, wherein M is Zr or Hf, and both E and E' are oxygen.

7. The process of claim 1, wherein M is Hf.

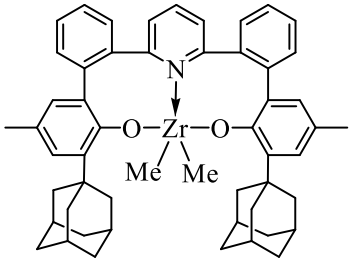
8. The process of claim 1 wherein the catalyst compound is represented by one or more of the following formulas:



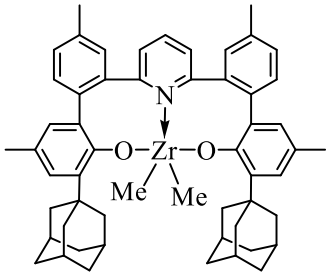
Complex 1



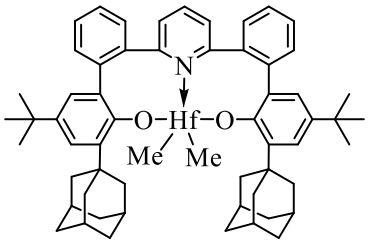
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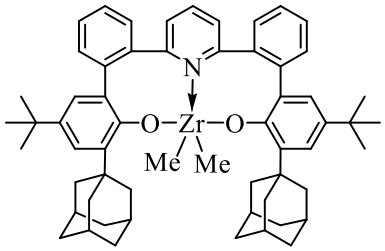
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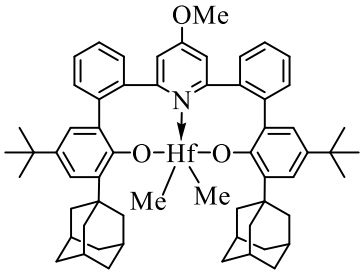
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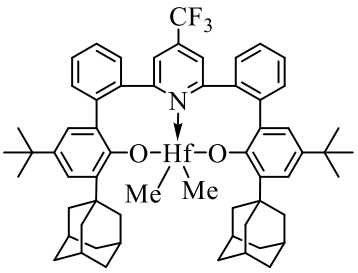
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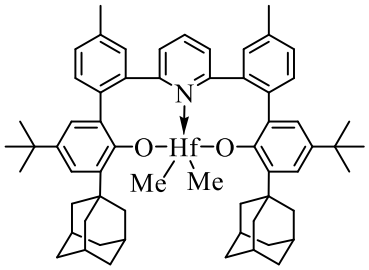
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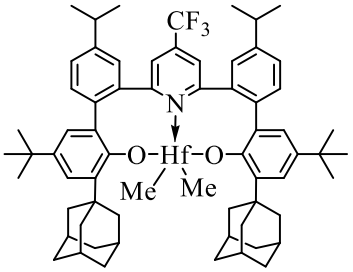
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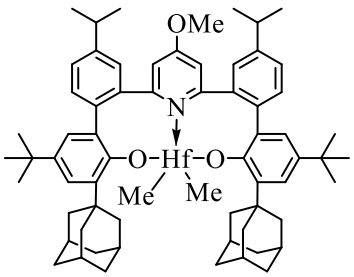
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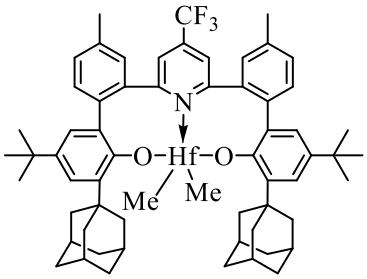
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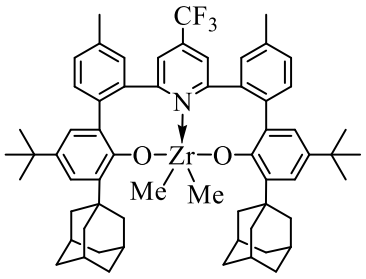
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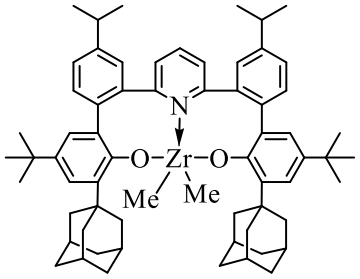
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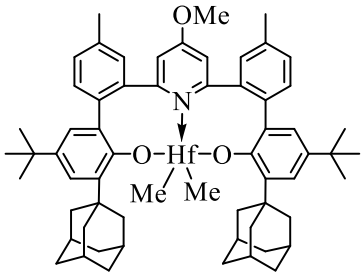
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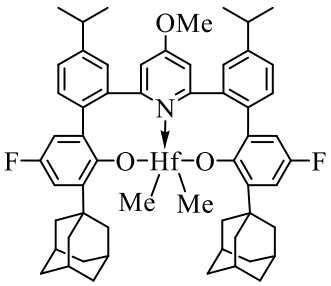
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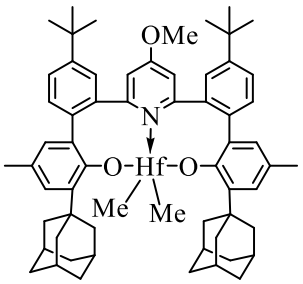
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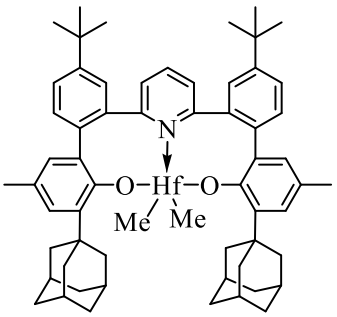
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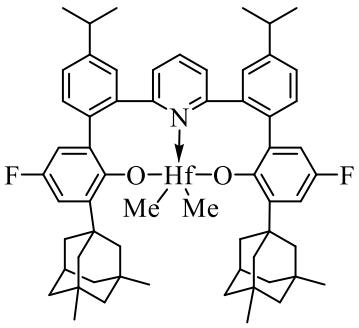
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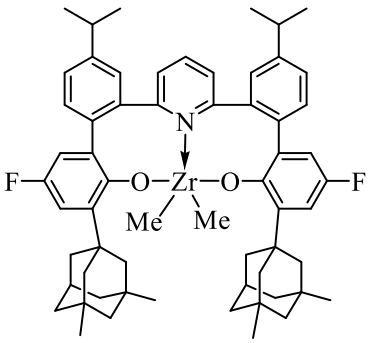
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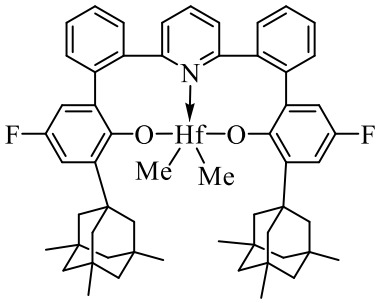
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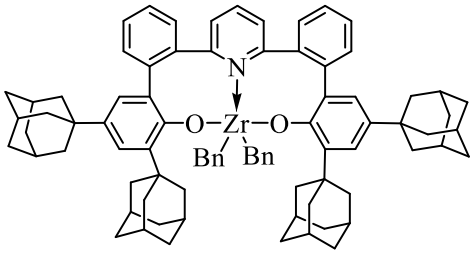
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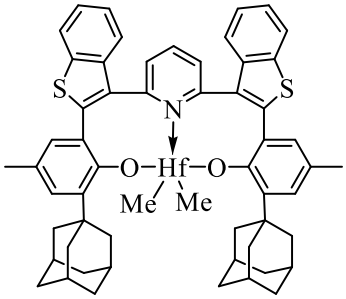
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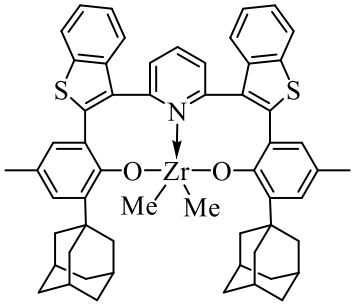
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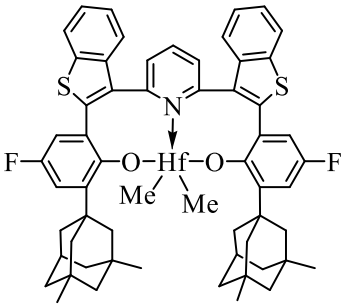
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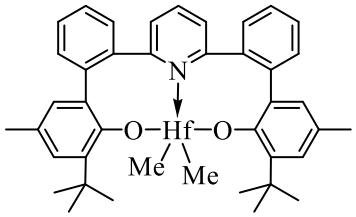
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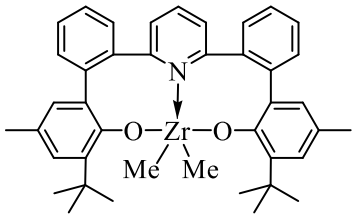
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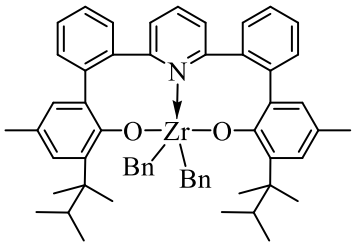
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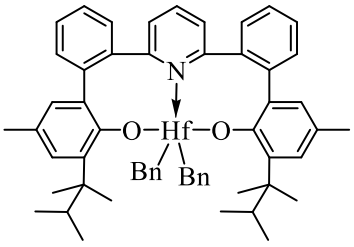
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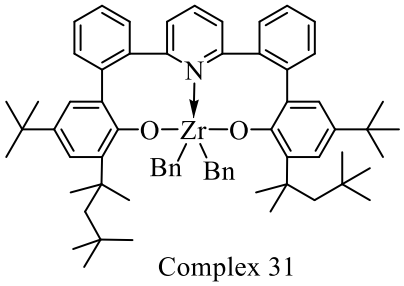
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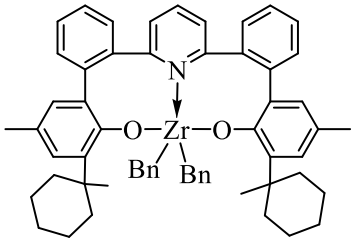
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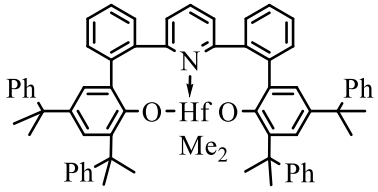
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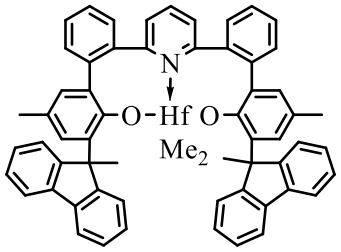
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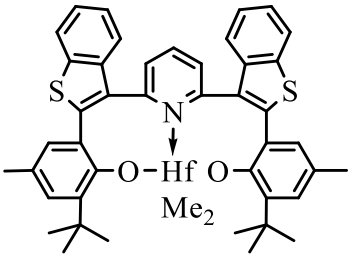
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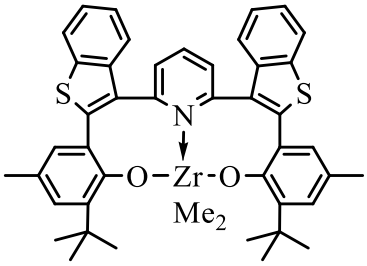
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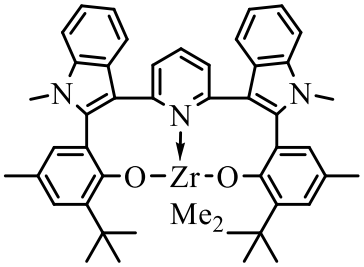
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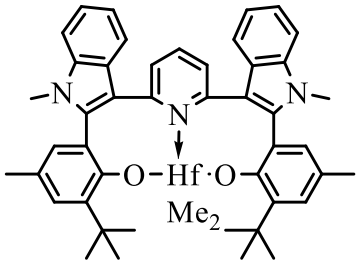
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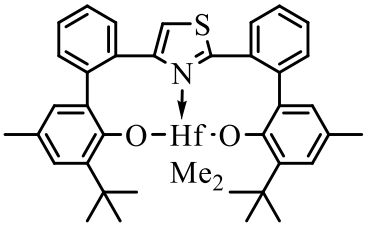
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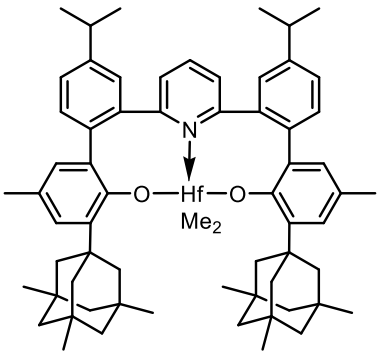
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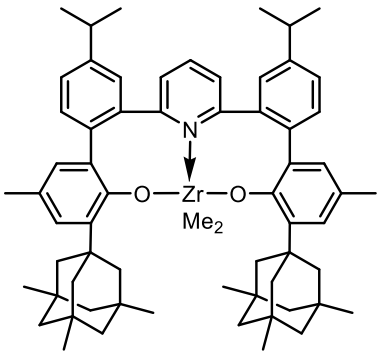
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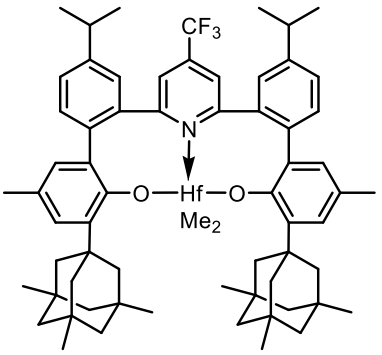
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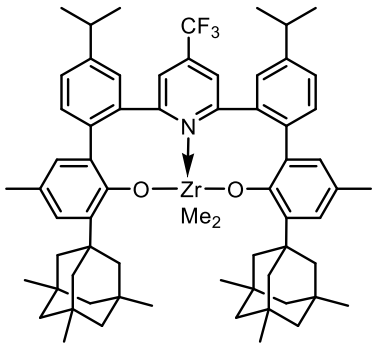
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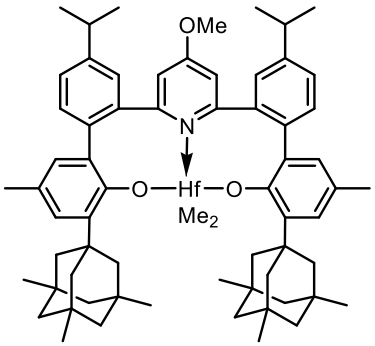
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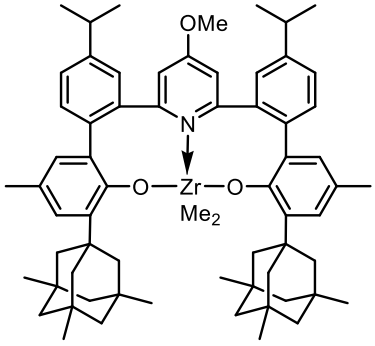
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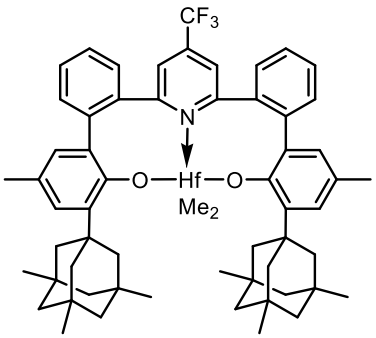
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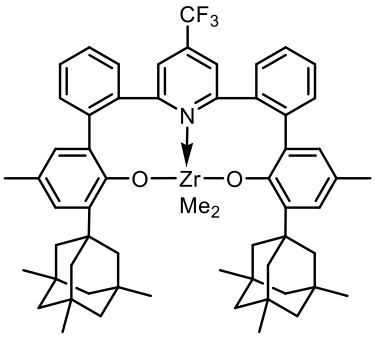
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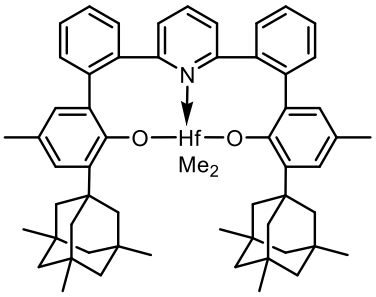
Complex 45



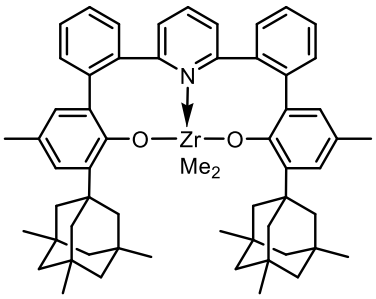
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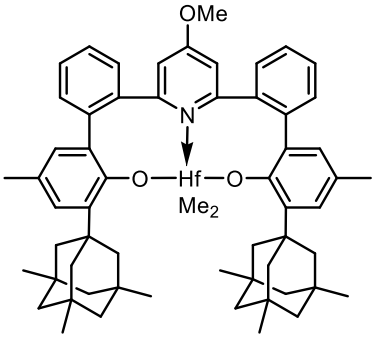
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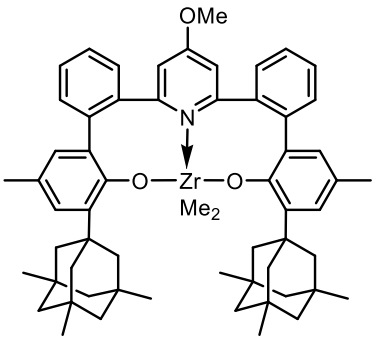
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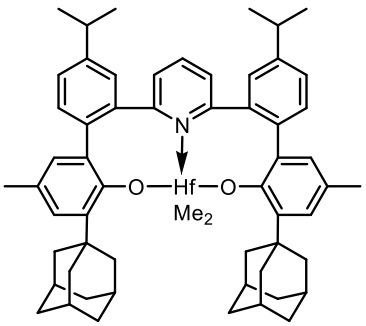
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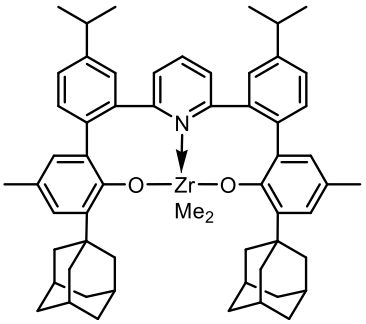
Complex 50



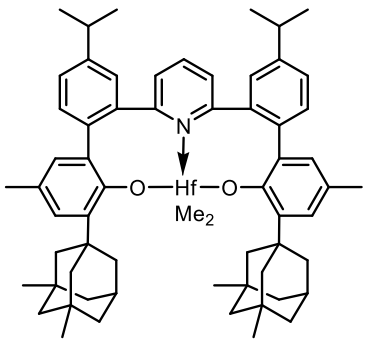
Complex 51



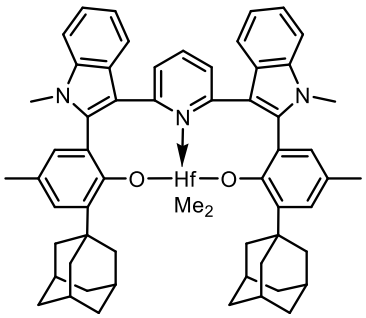
Complex 52



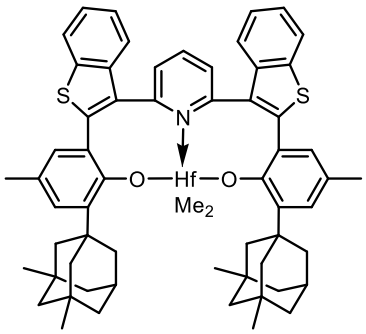
Complex 53



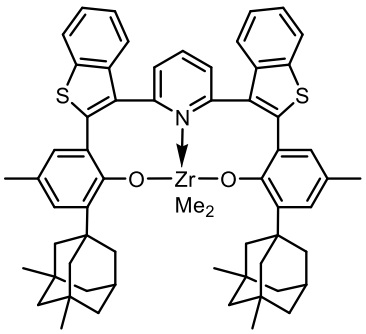
Complex 54



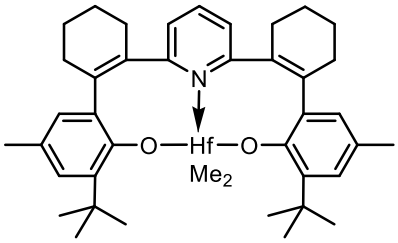
Complex 56



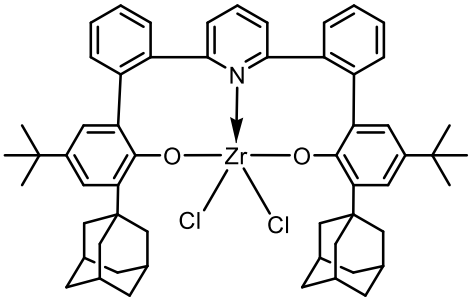
Complex 57



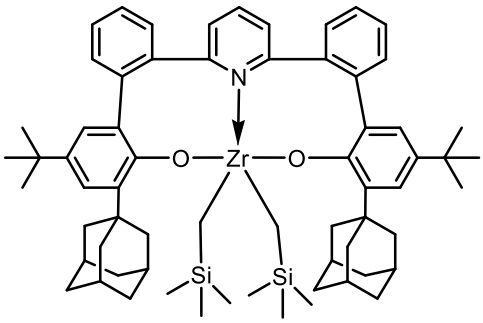
Complex 58



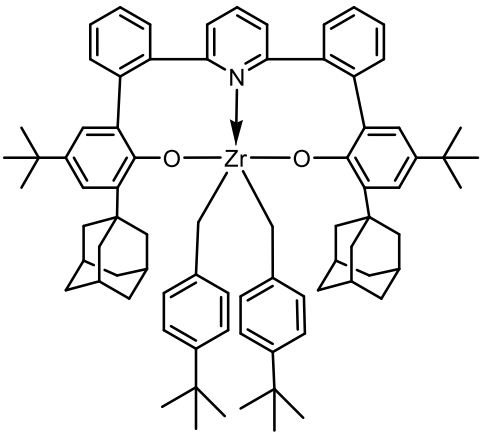
Complex 59



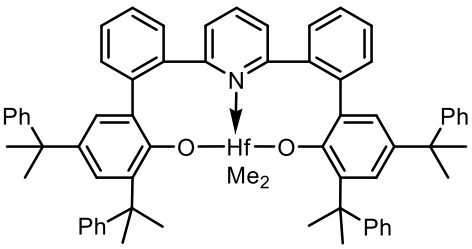
Complex 60



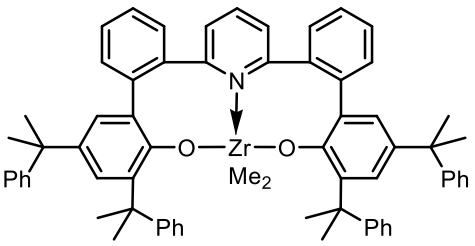
Complex 62



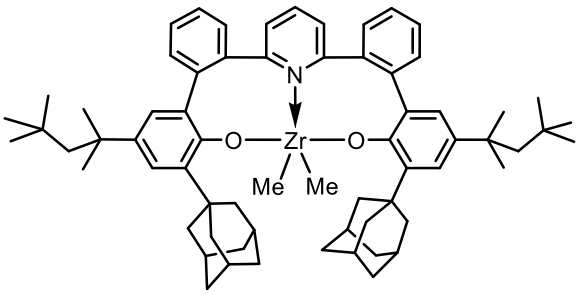
Complex 63



Complex 64



Complex 65



Complex 66

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