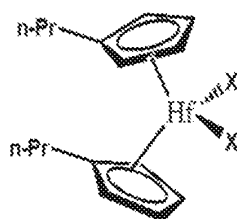


### Claims

What is claimed:

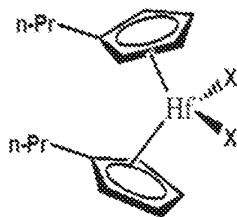
1. A method comprising:  
removing a portion of support particles that are more than 1.0, 1.5, 2.0, 2.5, or 3.0 standard deviations away from a mean particle diameter of a whole support particle population;  
forming a catalyst formulation that includes a portion of retained support particles; and  
utilizing the catalyst formulation in a gas phase polymerization.
2. A method comprising:  
injecting a catalyst formulation into a gas phase polymerization reactor via an effervescent catalyst injector having a support tube velocity that is at least equal to a catalyst tube velocity.
3. A catalyst formulation comprising:  
a metallocene and a stearyl containing compound selected from bis 2-hydroxyethyl stearyl amine, aluminum distearate, and combinations thereof, where the metallocene is represented by the following formula:



wherein each n-PR is n-propyl, and each X is independently CH<sub>3</sub>, Cl, or F.

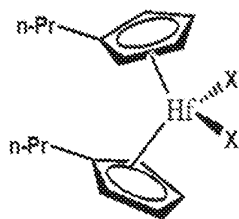
4. A method comprising:

contacting an activated metallocene and a stearyl containing compound selected from bis 2-hydroxyethyl stearyl amine, aluminum distearate, and combinations thereof, where the activated metallocene is prepared from a metallocene that is represented by the following formula:



wherein each n-PR is n-propyl, and each X is independently CH<sub>3</sub>, Cl, or F.

5. The method of claim 4, further comprising feeding the contacted activated metallocene and the stearyl containing compound to a polymerization reactor.
6. The method of claim 4, wherein contacting the activated metallocene and the stearyl containing compound occurs in a polymerization reactor.
7. A method for forming a catalyst formulation comprising:
  - calcining a support at a calcination temperature in a range from 200 to 650 °C;
  - combining the calcined support with a catalyst formulation including a metallocene and a stearyl containing compound to form the catalyst formulation, wherein the stearyl containing compound is selected from bis 2-hydroxyethyl stearyl amine, aluminum distearate, and combinations thereof, and wherein the metallocene is represented by the following formula:



wherein each n-PR is n-propyl, and each X is independently CH<sub>3</sub>, Cl, or F.