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(54) Title: LEWIS BASE CATALYSTS AND METHODS THEREOF

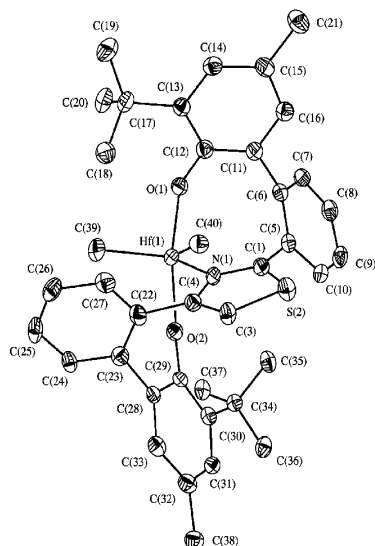


FIG. 1

(57) Abstract: The present disclosure relates to Lewis base catalysts. Catalysts, catalyst systems, and processes of the present disclosure can provide high temperature ethylene polymerization, propylene polymerization, or copolymerization as the Lewis base catalysts (e.g., bis(arylphenol ate) five-membered ring catalysts), can be stable at high polymerization temperatures and have good activity at the high polymerization temperatures. The stable catalysts with good activity can provide formation of polymers having high molecular weights or polymers having low to very molecular weights, and the ability to make an increased amount of polymer in a given reactor, as compared to conventional catalysts. Hence, the present disclosure demonstrates highly active catalysts capable of operating at high reactor temperatures while producing polymers with controlled molecular weights and or robust isotacticity.

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