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(54) Title: LEWIS BASE CATALYSTS AND METHODS THEREOF

(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. In at least one embodiment, the catalyst compounds belong to a family of compounds comprising amido-phenolate-heterocyclic ligands coordinated to group 4 transition metals. The tridentate ligand may include a central neutral heterocyclic donor group, an anionic phenolate donor, and an anionic amido donor. In some embodiments, the present disclosure provides a catalyst system comprising an activator and a catalyst of the present disclosure. In some embodiments, the present disclosure provides a polymerization process comprising a) contacting one or more olefin monomers with a catalyst system comprising: i) an activator and ii) a catalyst of the present disclosure.