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(54) Title: PROCESS TO MAKE A LIQUID CATALYST HAVING A HIGH MOLAR RATIO OF ALUMINUM TO NITROGEN

(57) Abstract: A process to make a liquid catalyst having a molar ratio of Al to N greater than 2.0, comprising: a) using an ammonium-based ionic liquid catalyst to catalyze a reaction, wherein the ammonium-based ionic liquid catalyst builds up an impurity during the reaction; and b) mixing the ammonium-based ionic liquid catalyst, having an impurity, with aluminum. There is also provided a process for isoparaffin/olefin alkylation, wherein the ionic liquid catalyst comprises a quaternary ammonium ionic liquid salt; and wherein the ionic liquid catalyst has a molar ratio of Al to N greater than 2.0 when held at a temperature at or below 25°C for at least two hours. There is also provided a method for making a catalyst having a molar ratio of Al to N greater than 2.0, and a process for hydroconversion comprising maintaining a level of conjunct polymer in an ionic liquid catalyst.



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