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(54) Title: SELECTIVE, CATALYTIC, AND THERMALLY INDUCED FUNCTIONALIZATION OF PRIMARY C-H BONDS IN HYDROCARBONS

(57) Abstract: A process for selectively functionalizing an aliphatic hydrocarbon and/or alkyl branched alicyclic hydrocarbon at a primary C-H hydrocarbon bond comprising thermally reacting a functionalizing reagent and the hydrocarbon in the presence of a catalyst, said catalyst comprising: a) a source of a transition metal; b) a source of a 3 to 8, cyclic or non-cyclic, aromatic or non-aromatic, neutral, cationic or anionic, substituted or unsubstituted, electron donor moiety which does not dissociate under thermal reaction conditions, wherein said moiety (i) lacks aromatic C-H bonds on the moiety directly bonded to the transition metal, or (ii) contains sterically hindered aromatic C-H bonds on the moiety directly bonded to the transition metal; and c) a source of ligands capable of formally donating an electron pair to the transition metal of a) and which dissociate thermally; and wherein said functionalizing reagent comprises a source of boron.