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(54) Title: HYDROGENATION PROCESS USING CATALYST COMPRISING ORDERED INTERMETALLIC COMPOUND

(57) Abstract: The present invention relates to a process for the hydrogenation, in particular the selective hydrogenation of unsaturated hydrocarbon compounds using a hydrogenation catalyst comprising an ordered intermetallic compound. The ordered intermetallic compound comprises at least one metal of type A capable of activating hydrogen, and at least one metal of type B not capable of activating hydrogen, and the structure of the ordered intermetallic compound is such that at least one kind of type A metals is mainly surrounded by atoms of the metal of type B. According to another aspect, the present invention is concerned with a catalyst comprising a support and the above ordered intermetallic compound supported on the support. According to still another aspect, the invention pertains to the use of a binary Pd-Ga ordered intermetallic compound as a catalyst. The hydrogenation process and catalysts of the present invention achieve a selectivity to the target compounds, e.g. in the selective hydrogenation of acetylene to ethylene, which is superior to the prior art.

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