

Hydrogenation of Olefins Catalyzed by Polymer-Supported Palladium-Imidazole

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摘要 A polymer-supported palladium-imidazole catalyst was used to catalyze the hydrogenation of various olefins under mild conditions. The rate of hydrogenation was studied. The effects of factors such as substrate concentration, catalyst concentration, partial pressure of hydrogen and temperature on initial rate of reaction of selected olefins were investigated. A mechanism for the reaction was proposed from the rate equation. The effects of the solvent and structure of the olefin on the rate of hydrogenation were investigated. The catalyst showed good reusability without any leaching of metal from the support. The homologous analog of the polymer-supported catalyst could not be used as catalyst for the hydrogenation of olefins in methanol because there was precipitation of the metal during reaction.

关键词: [polymer-supported palladium-imidazole catalyst](#) [cyclohexene](#) [relative reactivity](#) [sequential hydrogenation](#) [recycling efficiency](#)

Abstract: A polymer-supported palladium-imidazole catalyst was used to catalyze the hydrogenation of various olefins under mild conditions. The rate of hydrogenation was studied. The effects of factors such as substrate concentration, catalyst concentration, partial pressure of hydrogen and temperature on initial rate of reaction of selected olefins were investigated. A mechanism for the reaction was proposed from the rate equation. The effects of the solvent and structure of the olefin on the rate of hydrogenation were investigated. The catalyst showed good reusability without any leaching of metal from the support. The homologous analog of the polymer-supported catalyst could not be used as catalyst for the hydrogenation of olefins in methanol because there was precipitation of the metal during reaction.

Keywords: [polymer-supported palladium-imidazole catalyst](#), [cyclohexene](#), [relative reactivity](#), [sequential hydrogenation](#), [recycling efficiency](#)

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