

Rhodium(I) and rhodium(III)-heteropolyacids supported on MCM-41 for the catalytic hydroformylation of styrene derivatives.

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Abstract

Rh supported catalysts were prepd. by impregnating rhodium(I) and rhodium(III) complexes with and without heteropoly acids for the hydroformylation of styrene derivs. The effect of the pore size of MCM-41 was considered. The addn. of water showed a promoting effect with Rh(III) based catalysts. The amt. of water showed also a big effect on the catalytic activity of the Rh(III) supported catalyst. The change of the temp. affects the selectivity of the reaction time of the reaction. Different heteropolyacids such as H₃PMo₁₂O₄₀·xH₂O (HPA-Mo₁₂) and H₃PW₁₂O₄₀·yH₂O (HPA-W₁₂) were used as co-catalysts that were impregnated along with rhodium complexes on the inorg. supports. The results showed a clear effect of the heteropolyacid H₃PW₁₂O₄₀·yH₂O (HPA-W₁₂) in increasing the catalytic activity of the rhodium supported catalyst.