

Heteropolyacids enhanced the catalytic activity of Rh₆(CO)₁₆ in the hydroformylation of alkenes.

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Abstract

Active homogeneous catalytic systems based on Rh₆(CO)₁₆-heteropoly acids for the regioselective hydroformylation of styrene and 1-octene and similar alkenes have been developed. The effects of the amt. and the type of the heteropoly acid have been studied and a significant improvement of the conversion of styrene and the selectivity towards branched aldehydes was found. Other rhodium complexes were also considered in the study and the results showed the advantages of the rhodium cluster Rh₆(CO)₁₆ assocd. with the heteropolyacid H₃PW₁₂O₄₀. The effects of temp., type of solvent, and CO/H₂ pressure have also been considered in order to optimize the reaction conditions.