Rhodium complexes with dioximes as catalysts of hydroformylation and hydrogenation of 1-hexene.

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Rhodium(II) complexes with dioximes $[Rh(Hdmg)_2(PPh_3)]_2$ [**I**] (Hdmg=monoanion of dimethylglyoxime) and $[Rh(Hdmg)(ClZndmg)(PPh_3)]_2$ [**II**] catalyse hydroformylation and hydrogenation reactions of 1-hexene at 1 MPa CO/H_2 and 0.5 MPa H_2 at 353 K, respectively. Hydroformylation with complex [**I**] produces 94% of aldehydes (*n*/*iso*=2.2) and 6% 2-hexene whereas the second catalyst [**II**] gives ca. 40% of aldehydes (*n*/*iso*=2.1) and 60% of 2-hexene. Corresponding Rh(III) complexes are inactive in hydroformylation except of $RhH(Hdmg)_2(PPh_3)$ [**III**], which shows activity similar to [**I**]. Complexes $[Rh(Hdmg)_2(PPh_3)]_2$ [**I**], $[Rh(Hdmg)(ClZndmg)(PPh_3)]_2$ [**II**], $RhH(Hdmg)_2(PPh_3)$ [**III**] and $[Rh(Hdmg)_2(PPh_3)_2]ClO_4$ [**V**] catalyse 1-hexene hydrogenation with an average TON ca. 18 cycles/mol [Rh]×min. Complex [**II**] has also been found to catalyse hydrogenation of cyclohexene, 1,3-cyclohexadiene and styrene.

Słowa kluczowe

Rhodium complexes, Rhodoximes, Hydroformylation, Hydrogenation

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