

New bimetallic rhodium-zirconium catalysts for homogeneous olefin hydroformylation.

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Streszczenie

Catalytic activity of bimetallic system composed with $\text{Rh}(\text{acac})(\text{CO})_2$ and $\text{cp}_2\text{Zr}(\text{CH}_2\text{PPh}_2)_2$ or $\text{cp}_2\text{ZrH}(\text{CH}_2\text{PPh}_2)$ ($\text{cp} = \text{C}_5\text{H}_5$) in hex-1-ene, 1,5-hexadiene and 1,7-octadiene hydroformylation have been studied at 80°C , 10 atm of $\text{H}_2\text{CO}=1$. Hydroformylation of hex-1-ene produces normal and branched aldehydes of 69–85% yield and n/iso ratio 1.8–2.0. Hydroformylation of dienes gives unsaturated monoaldehydes (ca. 30% yield). Applying ^1H , ^{31}P NMR, UV-VIS and IR spectroscopy the following complexes have been identified: $\text{Rh}(\text{acac})(\text{CO})_2\text{L}$ (1), $\text{Rh}(\text{acac})(\text{CO})(\text{L})$ (2), and $\text{Rh}_4(\text{CO})_x\text{L}_{12-x}$ (3) (where: $\text{L} = \text{cp}_2\text{Zr}(\text{CH}_2\text{PPh}_2)_2$, $\text{cp}_2\text{ZrH}(\text{CH}_2\text{PPh}_2)$, $x = 8 - 11$).

Adres publiczny

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