



Coordination studies of nitrogen-containing aryl phosphine ligands P^N and $P^N N$ with rhodium.

Autorzy

Katarzyna Wajda-
Hermanowicz

Andrzej Kochel

Robert Wróbel

Rok wydania

2018

Czasopismo

Journal of Organometallic
Chemistry

Numer woluminu

860

Strony

30-48

DOI

10.1016/j.jorganchem.2018.01.060

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The coordination behavior of the heterofunctional phosphine ligand $PPh_2NH(2-Py)$, $PPh_2(o-C_6H_4)CH=N-(CH_2)_nPh$ ($n=0-3$) and $PPh_2(o-C_6H_4)CH=N-(CH_2)_n-(2-Py)$ ($n=1$ or 2) towards $Rh(I)$ and $Rh(III)$ are reported and examples of neutral and cationic complexes containing bi-dentate P^N or tri-dentate $P^N N$ and $N^N C$ chelating modes of coordination are found. The synthesized complexes were characterized using different analytical and spectroscopic techniques including 1H , $^{13}C\{^1H\}$ and $^{31}P\{^1H\}$ NMR spectroscopy IR spectroscopy, ESI mass spectrometry and elemental analysis. The crystal structure of representative compounds has been determined by X-ray diffraction methods. The fluxional behavior in solution of the rhodium(I) complexes of the type $[RhCl(CO)(P^N)=]$ has been investigated by NMR spectroscopy as well as the reactivity towards the oxidative-addition of MeI and I_2 . It was found that rhodium (III) complexes of the general formula $[RhCl_2(P^N)_2]Cl$ formed three of the five possible stereoisomers and that different solvents induced isomerization between these stereoisomers, indicating hemilability of the P^N ligands.

Słowa kluczowe

Rhodium complexes, Imino-phosphine ligands, X-ray crystallography, Oxidative addition, C-H activation

Adres publiczny

<https://doi.org/10.1016/j.jorganchem.2018.01.060>

Strona internetowa wydawcy

<http://www.elsevier.com>