Substitution of CO by picolines and amines in $RhCl(CO)(PR_3)_2$. Synthesis and crystal structure of *cis*-$RhCl(3\text{-pic})\{P(OPh)_3\}_2$.

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The title complex, $cis\text{-}RhCl(3\text{-pic})\{P(OPh)_3\}_2$ (3-pic = 3 picoline), has been prepared with two other isostructural rhodium complexes, respectively with 4-picoline and $CH_2{=}CH{-}CH_2NH_2$. The $RhCl(3\text{-pic})\{P(OPh)_3\}_2$ compound crystallizes in space group *P* with *a* = 10.531(6), *b* = 12.025(9), *c* = 15.943(8) Å, α = 83.01(5), β = 79.46(4), γ = 86.33(5)°, *Z* = 2. The $RhCl(amine)\{P(OPh)_3\}_2$ complexes were obtained in the reactions of $[Rh(\mu\text{-}OMe)(cod)]_2$, $[Rh(\mu\text{-}Cl)(cod)_2$ (cod = cycloocta-1,5-diene) or $RhCl(CO)\{P(OPh)_3\}_2$ with amines. CO substitution by amines $RhCl(CO)(PR_3)_2$ complexes [PR_3 = $P(OMe)_3$, $P(OPh)_3$, $P(O\text{-}o\text{-}MeC_6H_4)_3$, $P(O\text{-}m\text{-}MeC_6H_4)_3$, PEt_2Ph, $PEtPh_2$, PMe_2Ph, $PMePh_2$ or PPh_3] is limited by steric properties of amine and PR_3 ligands. 3-Picoline substitutes CO only in complexes with PR_3 ligands with cone angle γ ⩽ 140° [16]. The rate of CO substitution by 2-picoline is less than half that by 3-picoline.

Adres publiczny

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