

Highly Efficient Synthesis of (Phosphinodihydrooxazole)-(1,5-cyclooctadiene) Iridium Complexes

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A highly efficient one-pot procedure for the synthesis of complexes of the type $[\text{Ir}(\text{COD})(\text{Phox})]\text{X}$, where Phox is a (chiral) phosphinooxazoline ligand, $\text{X} = \text{PF}_6$ or $\text{B}[(3,5-(\text{CF}_3)_2\text{C}_6\text{H}_3)]_4$ (BARF), is developed. Former reported syntheses demanded the isolation of pure ligands by column chromatography, but the ligands tend to adsorb irreversibly on silica. Moreover, the chromatography has to be performed with careful exclusion of air. The present method avoids this difficulties. The yields of the syntheses are comparable with those starting from the pure ligands. The method is also suitable for the preparation of complexes of the type $[\text{Rh}(\text{COD})(\text{Phox})]\text{BARF}$ and $[\text{Rh}(\text{Phox})_2]\text{BARF}$.

Key words: Iridium, Rhodium, Chiral Ligand, Homogeneous Catalysis, Heterocycles