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Transfer Hydrogenation Reaction Using Novel Ionic Liquid Based Rh(I) and Ir(III)- Phosphinite Complexes as catalyst

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For the first time, (1-chloro-3-(3-methylimidazolidin-1-yl)propan-2-yl diphenylphosphinite chloride) (chloro η^4 -1,5-cyclooctadiene rhodium(I)) and (1-chloro-3-(3-methylimidazolidin-1-yl)propan-2-yl diphenylphosphinite chloride) (dichloro η^5 -pentamethylcyclopentadienyl iridium(III)) complexes have been synthesized with high yields. The novel catalysts were applied to transfer hydrogenation of various using 2-propanol as a hydrogen source. Notably, rhodium(I) complex is much more active in the transfer hydrogenation, giving the corresponding alcohols up to 99% conversions in 5 min ($\text{TOF} \leq 1176 \text{ h}^{-1}$).

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