Supplementary material

NMR measurements were made with a 400 MHz Bruker Avance DPX-400 and a 400 MHz Jeol JNM-GX 400. Deuterated solvents were dried by conventional methods, stored under molecular sieves and degassed prior to use.

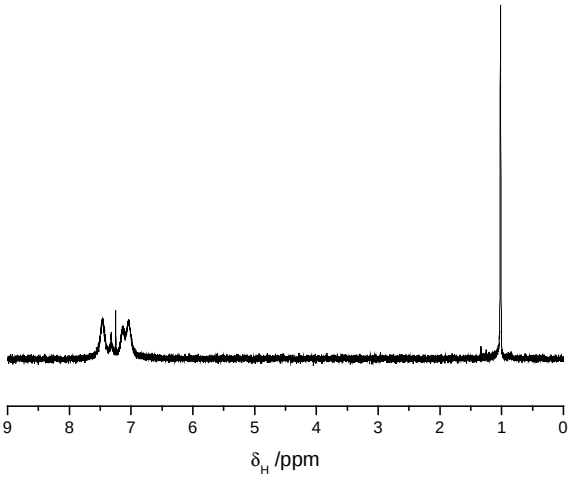

Fig. 1s – ^{1}H-NMR of Cp*RuCl(PPh_3)$_2$ (complex **7**) in $CDCl_3$ at RT.

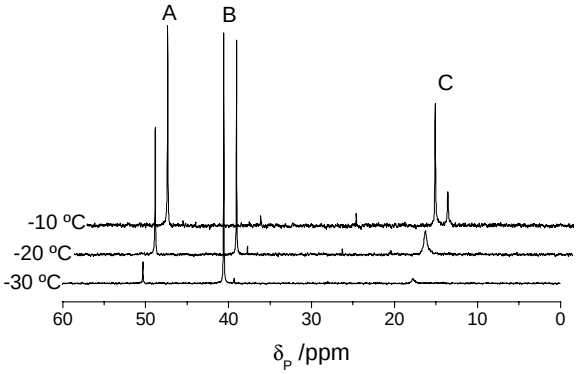

Fig. 2s – ^{31}P-NMR of the formation of complex 8.
A. Complex 8; B. Complex 7; C. Phosphorus ylide.

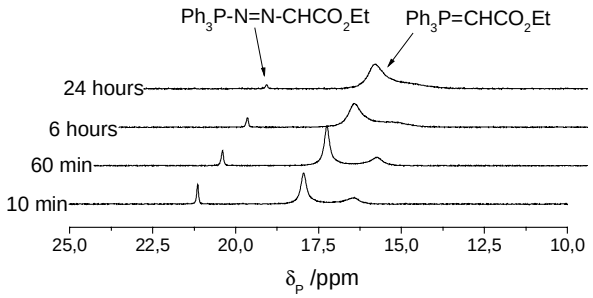

Fig. 3s – ^{31}P-NMR of the catalysis in the absence of aldehyde.

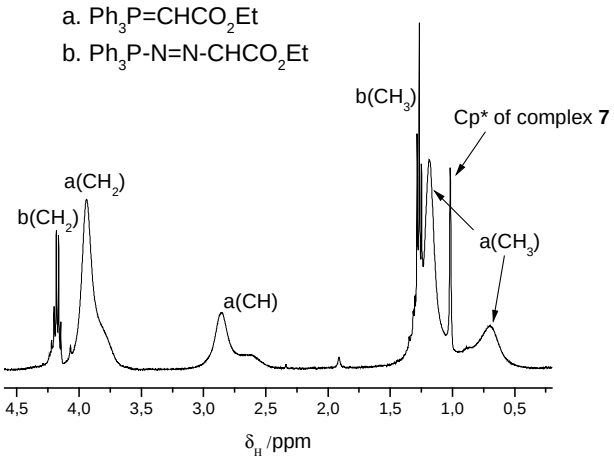

Fig. 4s - ^{1}H-NMR of the catalysis in the absence of aldehyde, after 5 min of reaction time (aromatic region excluded). The ratio phosphorus ylide/ phosphazine was determined by integration of the CH_2 peaks of each product.

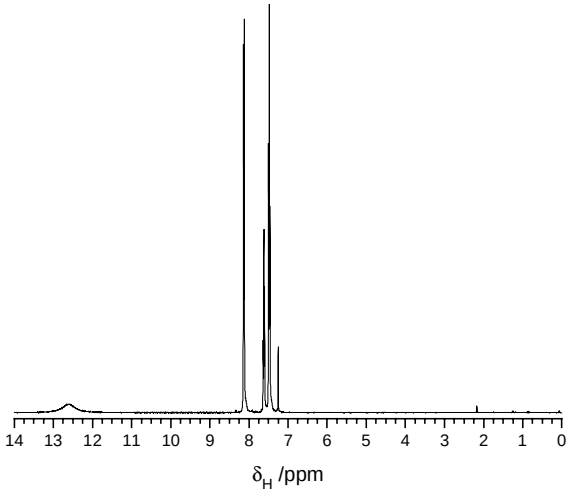

Fig. 5s – ^{1}H-NMR of benzoic acid in $CDCl_3$ at RT.