

Arylamidate palladium complexes containing deprotonated phthalimide and *p*-methylbenzamide: possibility of their participation in reductive elimination

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Complex 1. Pd(dba)₂ (288 mg, 0.5 mmol) and DPPF (278 mg, 0.5 mmol) in 2 ml of toluene saturated with argon were placed in a reactor, and *p*-CF₃C₆H₄Br (350 μl, 563 μg, 2.5 mmol) was added after mixing. The reaction was carried out with stirring in an argon atmosphere at 100 °C. The progress of the reaction was monitored based on the disappearance of DPPF (TLC, EtOAc–light petroleum 1:10 as the eluent]. The precipitate formed after heating for 1 h was filtered off; the filtrate was kept for subsequent treatment. The precipitate was washed with toluene, dissolved in chloroform (5 ml) and filtered through a celite layer. The solution was concentrated until crystals appeared, and the product was then precipitated with hexane. The compound precipitated was washed twice with hexane and dried to give 346 mg (78%) of orange-yellow crystals. The filtrate was evaporated on 40–63 μm silica gel. Chromatographic separation (EtOAc–light petroleum 1:4, then 1:1 as eluents) gave another 21 mg (5%) of the product. ¹H NMR (THF) δ: 7.99–8.10 (m, 4H), 7.39–7.47 (m, 6H), 7.31–7.39 (m, 4H), 7.24–7.31 (m, 2H), 7.08 (td, 4H, *J* 8 Hz, *J* 2.5 Hz), 7.03 (m, quasi-doublet, 2H, *J* 8 Hz), 6.64 (m, quasi-doublet, 2H, *J* 8 Hz), 4.74–4.80 (m, 2H), 4.50–4.55 (m, 2H), 4.14–4.19 (m, 2H). ¹H NMR (CDCl₃) δ: 8.00–8.10 (m, 4H), 7.42–7.56 (m, 6H), 7.28–7.40 (m, 6H), 7.04–7.18 (m, 6H), 6.77 (d, 2H, *J* 8 Hz), 4.68–4.72 (m, 2H), 4.46–4.57 (m, 2H), 4.14–4.19 (m, 2H), 3.57–3.65 (m, 2H). ³¹P NMR (THF) δ: 30.41 (d, *J* 32.5 Hz), 10.40 (d, *J* 32.5 Hz). ³¹P NMR (CDCl₃) δ: 32.50 (*J* 32.5 Hz), 11.73 (*J* 32.5 Hz). Found (%): C, 55.55; H, 3.53. Calc. for C₄₇H₃₂F₃P₂Pd (%): C, 55.59; H, 3.64.