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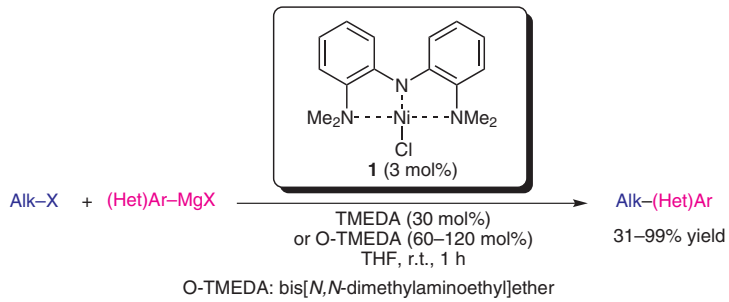
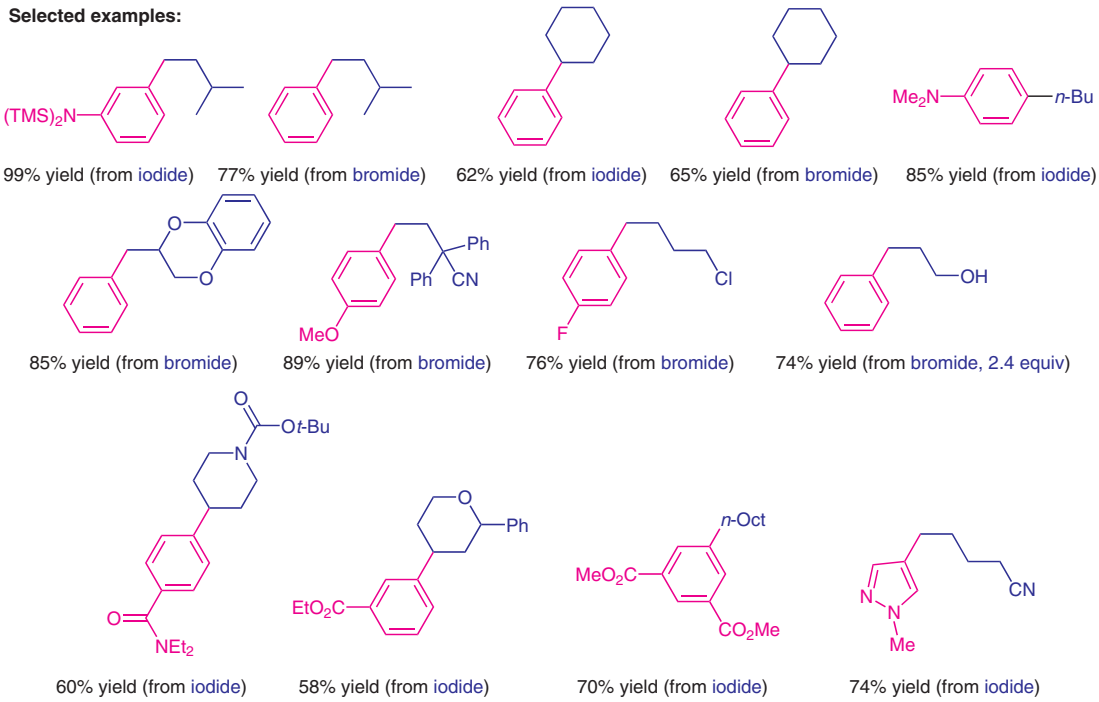
Functional Group Tolerant Kumada–Corriu–Tamao Coupling of Nonactivated Alkyl Halides with Aryl and Heteroaryl Nucleophiles: Catalysis by a Nickel Pincer Complex Permits the Coupling of Functionalized Grignard Reagents

J. Am. Chem. Soc. **2009**, *131*, 9756-9766.

Functional Group Tolerant Kumada–Corriu–Tamao Coupling



Selected examples:



Significance: The nickel(II) pincer complex **1** could be successfully used to promote a range of Kumada–Corriu–Tamao couplings using both functionalized organomagnesium reagents and alkyl iodides/bromides. Sensitive functional groups, such as ester, cyano, amide, and CF_3 were well tolerated.

Comment: This C_{sp^2}–C_{sp^3} coupling reaction displays a high generality, proceeds under mild reaction conditions, and leads to fast reaction times. These features make it a valuable tool for the coupling of aryl or heteroaryl organomagnesium reagents with non-activated β-hydride-containing primary and secondary alkyl halides.

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Synfacts 2009, 10, 1139-1139 Published online: 22.09.2009
DOI: 10.1055/s-0029-1217895; **Reg-No.:** P11809SF