Functional Group Tolerant Kumada–Corriu–Tamao Coupling

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 CF₃ were well tolerated.

Comment: This Cₛ₋ₘ⁻⁻C₃₆⁻⁻⁻⁻ 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.