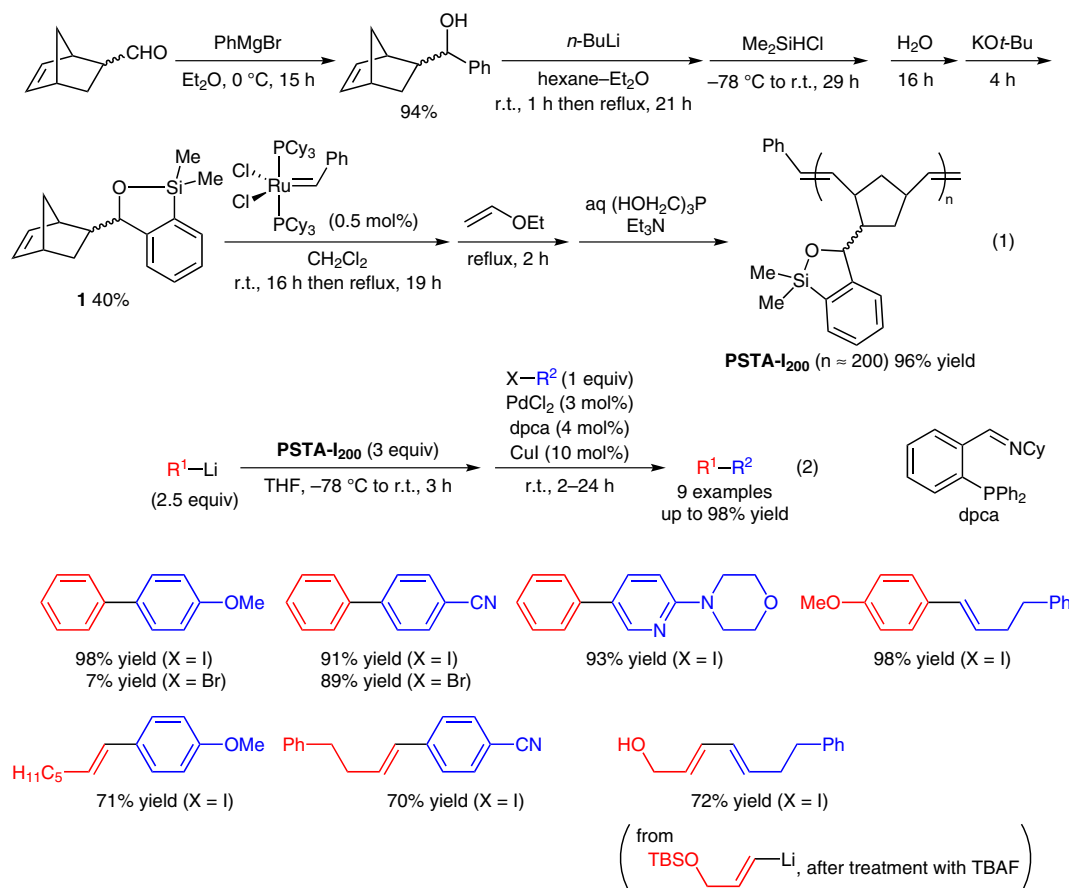


Pd-Catalyzed Cross-Coupling Using Polymer-Supported Siloxane



Significance: Polymer-supported siloxane-transfer agent **PSTA-I₂₀₀** was prepared by the ring-opening metathesis polymerization of siloxane **1**, which was synthesized from commercially available 5-norbornene-2-carboxaldehyde (eq. 1). Palladium-catalyzed cross-coupling reactions of aryl- and alkenyllithium with organohalides were achieved by using stoichiometric amounts of **PSTA-I₂₀₀** (eq. 2, 9 examples, up to 98% yield).

Comment: **PSTA-I₂₀₀** was characterized with IR, NMR, and GPC. After the cross-coupling reaction, **PSTA-I₂₀₀** was recovered via precipitation with MeCN. In the reaction of phenyllithium with 4-iodoanisole, **PSTA-I₂₀₀** was reused twice with a small decrease of reaction efficiency (1st reuse; 91% yield, 2nd reuse; 81% yield). An increase in the average molecular weight of the recovered **PSTA-I₂₀₀** was observed, probably due to polymer cross-linking by the attack of the oxyanion generated in situ on another siloxane of a different polymer chain.