Design, Synthesis, and Validation of an Effective, Reusable Silicon-Based Transfer Agent for Room-Temperature Pd-Catalyzed Cross-Coupling Reactions of Aryl and Heteroaryl Chlorides with Readily Available Aryl Lithium Reagents


**Palladium Cross-Couplings with a Silicon-Based Transfer Agent**

**Significance:** The authors present a reusable, bench-stable, silicon-based transfer agent for effective room-temperature palladium-catalyzed cross-couplings of aryl chlorides with aryl lithium reagents.

**Comment:** DFT calculations outline the importance of the CF₃ groups of the transfer agent and support a σ-bond-metathesis mechanism during transmetalation.

**Proposed catalytic cycle:**

**Selected examples:**

- 99% yield
- 82% yield
- 78% yield
- 52% yield
- 87% yield
- 81% yield