Category

Metals in Synthesis

Key words

ketones organotin palladium catalysis Stille-carbonylative cross-coupling



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A General, Selective, and Facile Method for Ketone Synthesis from Acid Chlorides and Organotin Compounds Catalyzed by Palladium

J. Am. Chem. Soc. 1978, 100, 3636-3638.

The Stille Carbonylative Cross-Coupling Reaction

Proposed catalytic cycle:

Selected examples:

Significance: Milstein and Stille reported a highyielding palladium-catalyzed carbonylative coupling reaction of acid chlorides and organotin reagents. The reaction is very mild, does not require inert atmosphere and shows tolerance to a wide scope of functional groups. **Comment:** Notably, aryltin groups are transferred in preference to alkyltin groups. The authors also showed that a second organic group attached to the tin can be transferred, however at a notably slower rate.

Review: J. K. Stille *Angew. Chem., Int. Ed. Engl.* **1986**, *25*, 508–524.