

Catalysis Letters 2009 vol.130 N3-4, pages 679-682

Pd[tBuNH(S)NHP(O)(OiPr)2-S]2Cl2 complex as air- and moisture-stable catalyst for palladium catalyzed suzuki cross-coupling reaction

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Abstract

A highly efficient Suzuki cross-coupling reaction between phenyl bromide and phenylboronic acid catalyzed by the palladium complex Pd[tBuNH(S)NHP(O)(OiPr)2-S]2Cl2 in acetonitrile, toluene, THF or DMF has been investigated. The bases we have employed for this reaction were Na2CO3, K2CO3 or Cs2CO3. It was established that using DMF and K2CO3 at 100 °C shows excellent yields of the product at the catalyst amount of 0.1 mmol. The cross-coupling reactions of iodo- and chloro-benzene with phenylboronic acid were also investigated. The influence of the halide nature was as expected. © 2009 Springer Science+Business Media, LLC.

<http://dx.doi.org/10.1007/s10562-009-9936-8>

Keywords

Cross-coupling, N-phosphorylthiourea, Palladium, Phenyl halide, Phenylboronic acid, Suzuki-Miyaura reaction