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Insertion of carbenes into p-h bonds. 5. f synthesis of new phosphonates and phosphinates in reactions catalysed by cu, pd, rh, ni complexes

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Abstract

Cu(OTf)₂ and Cu(acac)₂ were found to be the most effective catalysts in the reaction of diazo compounds Ph₂CN₂ (1a), EtOC(O)CHN₂ (1b), MeOC(O)CHN₂ (1c), MeC(O)CN₂C(O)OMe (1d), Cl-CH₂C(O)CHN₂ (1e) and CH₂N₂ (1f) with hydrophosphoryl compounds (MeO)₂P(O)H (2a), (t-BuO)₂P(O)H (2b), Ph(MeO)P(O)H (2c), (EtO)₂P(O)H (2d) and (FORMULA OMITTED) resulting in P-C bond formations. Cu, Pd and Rh acetates and Ni(acac)₂ have a much lower efficiency. Chlorines in Cl₃CC(O)CH₂P(O)(OMe)₂ (3k) and Cl₂CHC(O)CH₂P(O)(OMe)₂ (3l) are reduced in the copper catalysed Atherton-Todd reaction. © 1992, Taylor & Francis Group, LLC. All rights reserved.

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Keywords

Catalyst, diazo compound, hydrophosphoryl compound, insertion, phosphinate, phosphonate