Unprecedented metal-free C(sp^3)-C(sp^3) bond cleavage; switching from *N*-alkyl- to *N*-methyl-1,3,5-triaza-7-phosphaadamantane.

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Rok wydania

2009

Czasopismo

Organometallics

Numer woluminu

28

Strony

1683-1687

DOI

10.1021/om801026a

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

N-Alkyl-1,3,5-triaza-7-phosphadamantane halides [PTA-R]X (X = I^-, Br^-) with more than two carbon atoms in the alkyl chain are shown to easily convert, under mild conditions in aqueous medium, into the corresponding *N*-methyl derivatives, thus representing a novel type of metal-free C(sp^3)−C(sp^3) bond cleavage that affects inert, unstrained, and unbranched aliphatic groups. This unusual transformation is promoted by Cu ions and is proposed to occur via a postulated ammonium ylide. In the presence of Cu ions, this C−C bond dissociation is also a key point for the formation of a unique 2D Cu(I) coordination polymer with a rare *P,N*-coordination mode of the PTA cage.

Adres publiczny

https://doi.org/10.1021/om801026a

Strona internetowa wydawcy

https://www.acs.org/content/acs/en.html