

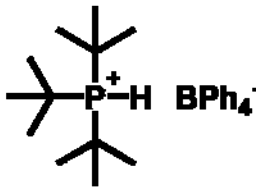
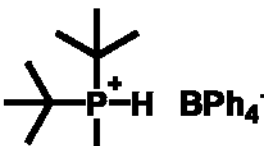
Phosponium Borate Derivatives



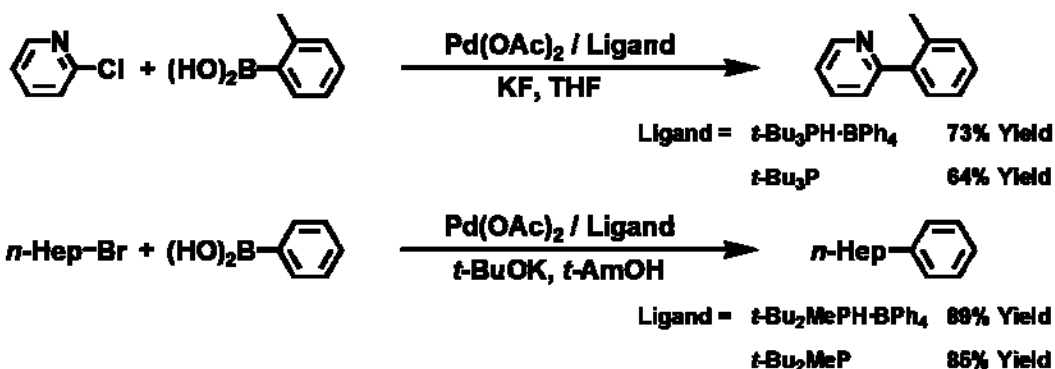
Reactions such as Suzuki Coupling, Sonogashira Coupling, Heck Reaction or Hartwig-Buchwald Coupling using Palladium complex, having trialkylphosphine as ligand, as catalyst is very useful reaction in the organic synthesis field. However, trialkylphosphine is very susceptible to oxidation in the air, and it is difficult to handle.

We Kanto Chemical launched phosponium borate product which has the same properties as trialkylphosphine and is stable in the air.

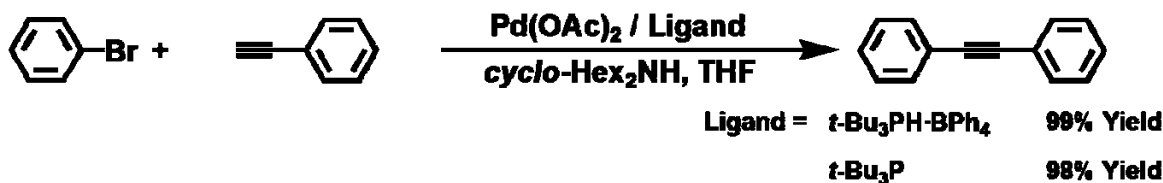
Product list

Product name	Product code	Size
Tri-<i>tert</i>-butylphosponium tetraphenylborate C ₃₆ H ₄₈ BP FW522.55 [131322-08-2] Appearance: White to pale yellow powder Stability: Stable in air (RT) Composition: 37-40% (as P(<i>t</i> -Bu) ₃)	 41128-45	10g
Di-<i>tert</i>-butylmethylphosponium tetraphenylborate C ₃₃ H ₄₂ BP FW480.47 Appearance: White to pale yellow powder Stability: Stable in air (RT) Composition: 32-34% (as P(<i>t</i> -Bu) ₂ Me)	 41129-45	10g

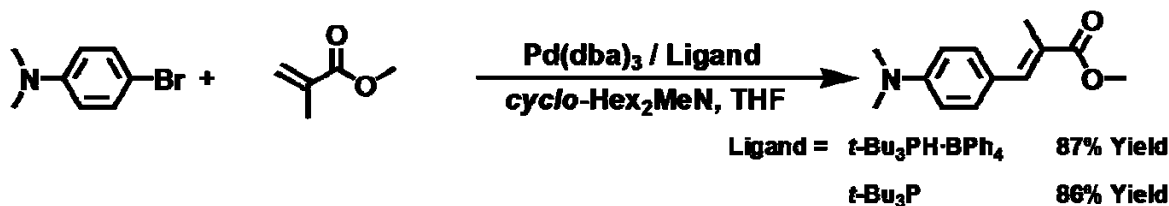
Reaction example



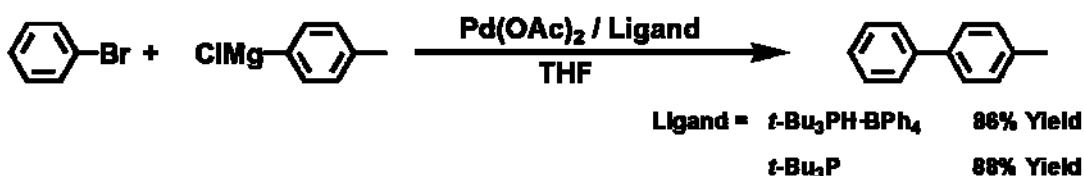
○ Sonogashira Coupling³⁾



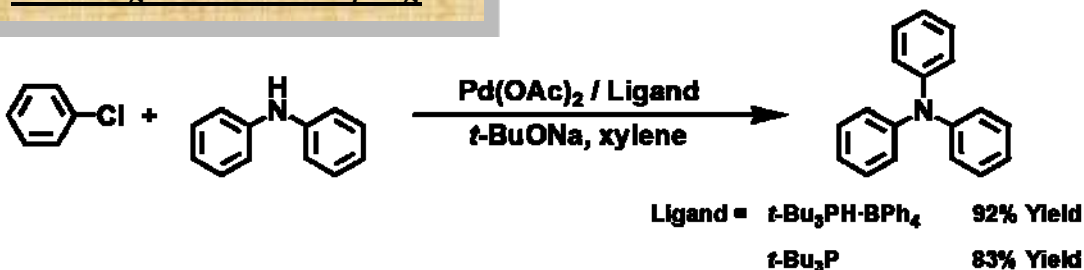
○ Heck Reaction⁴⁾



○ Cross Coupling



○ Hartwig-Buchwald Coupling⁵⁾



<Reference >

- (1) A. F. Littke, C. Dai, G. C. Fu, *J. Am. Chem. Soc.*, **122**, 4020(2000).
 - (2) J. H. Kirchhoff, M. R. Netherton, I. D. Hills, G. C. Fu, *J. Am. Chem. Soc.*, **124**, 13662(2002).
 - (3) T. Hundertmark, A. F. Little, S. L. Buchwald, G. C. Fu, *Org. Lett.*, **2**, 1729(2000).
 - (4) A. F. Littke, G. C. Fu, *J. Am. Chem. Soc.*, **123**, 6989(2001).
 - (5) T. Yamamoto, M. Nishiyama, Y. Koie, *Tetrahedron Lett.*, **39**, 2367(1998).
- *The yield of each reaction is the experimental value carried out according to each method described in the above references.



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