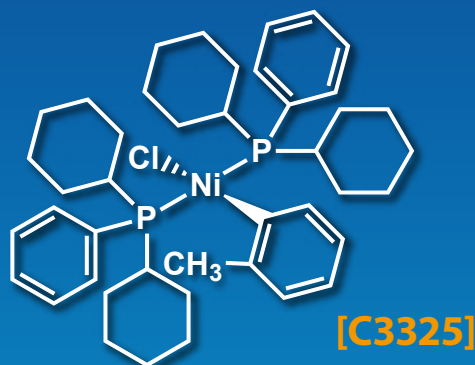


# Highly Air-stable Nickel Complex Jamison Catalyst

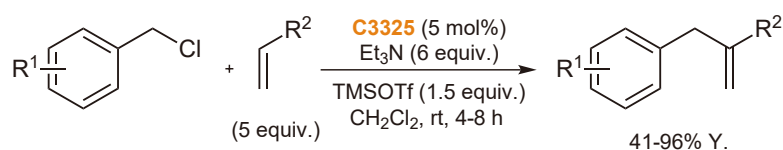


## Advantages

- No Glovebox Handling, No Degassing and No Drying of Reagents are Required
- Applicable to Various C-C Bond Forming Reactions

## Applications

### Ni catalyzed Heck-type reactions

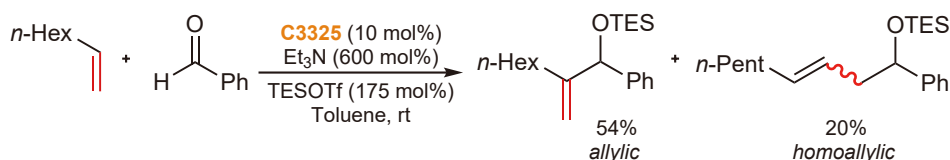


#### [Procedure]

To a vial containing a stir-bar are added **C3325** (0.050 mmol, 36.7 mg), alkene (5.00 mmol), triethylamine (6.00 mmol, 836  $\mu$ L), the benzyl chloride (1.00 mmol), and  $\text{CH}_2\text{Cl}_2$  (500  $\mu$ L). After stirring the mixture for a few seconds, TMSOTf (1.5 mmol) is added, the vial capped, and leave to stir for 4 to 8 hours. After the necessary time has elapsed, the reaction mixture is allowed to stir open to the air for 5 min., after which it is passed through a short pad silica gel. After concentration under reduced pressure, the crude materials are purified by column chromatography on silica gel and gives target compounds with 41-96% yield.

Reference E. A. Standley, T. F. Jamison, *J. Am. Chem. Soc.* **2013**, *135*, 1585.

### Ni catalyzed carbonyl-ene reactions



Reference R. Matsubara, A. C. Gutierrez, T. F. Jamison, *J. Am. Chem. Soc.* **2011**, *133*, 19020.

## Chlorobis[dicyclohexyl(phenyl)phosphino](o-tolyl)nickel(II)

100mg / 500mg [C3325]

Patent Cooperation Treaty Serial No. PCT/US2014/064565

## Related Products

Trimethylsilyl Triflate (= TMSOTf)

5g / 25g / 250g [T0871]

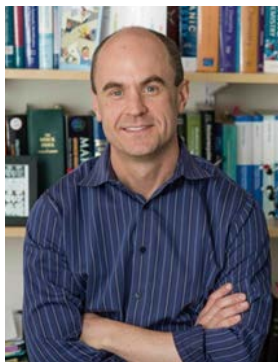
Triethylsilyl Triflate (= TESOTf)

5g / 25g [T1689]



# Highly Air-stable Nickel Complex "Jamison Catalyst"

## Introduction of the Researcher



## The Jamison Research Group

The Discovery and Application of New Reactions for Organic Synthesis

Professor **Timothy F. Jamison Ph. D.**  
Massachusetts Institute of Technology



## Research Description

Research in the Jamison Group is focused on the discovery and application of new reactions and technologies for organic synthesis. Many of the transformations they target are based on common structural motifs or functional group patterns present in molecules provided to us by nature.

Metal-catalyzed reactions continue to see widespread use in the pharmaceutical industry and for the synthesis of commodity chemicals. As such, a major area of research in the Jamison group is the development of transition-metal-catalyzed methods for the formation of carbon-carbon and carbon-heteroatom bonds with high regio-, diastereo-, and enantioselectivity. These efforts involve nickel(0) catalysts supported by phosphines, phosphites, and *N*-heterocyclic carbenes for the synthesis of complex molecules from simple feedstocks such as alkynes,  $\alpha$ -olefins, epoxides, and aldehydes. To further expand the application of the Heck-type, nickel-catalyzed benzylation of alkenes,  $(PCy_2)_2Ni(o-tolyl)Cl$  was developed as an air-stable nickel source.

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