B(C₆F₅)₃-Catalyzed Transfer Hydrosilylation of Alkenes

Significance: Herein, the easy-to-handle B(C₆F₅)₃-catalyzed ionic transfer hydrosilylation of various alkenes using 3-silylated cyclohexa-1,4-dienes is described. The corresponding hydrosilylated alkenes are obtained in high yields.

Comment: Often, work in the laboratory with Me₃SiH and Me₂SiH₂ is prohibited because of safety considerations. Since the silylated cyclohexadienes are precursors for the analogous gaseous hydrosilanes, which are generated in situ by a B(C₆F₅)₃-catalyzed release of these hydrosilanes, this protocol is a safe alternative for the hydrosilylation of alkenes.

**Selected examples:**

- Ph\_SiMe₃
  - 85% yield
- Ph\_SiMe₃
  - exo/endo > 95:5
- Ph\_SiMe₃
  - 73% yield
- Ph\_SiMe₃
  - 61% yield
- Ph\_SiMe₃
  - 69% yield
- Ph\_SiMe₃
  - 49% yield
- Ph\_SiMe₃
  - 64% yield
- Ph\_SiMe₃
  - 94% yield

**R₁ = H, Hex, Ph, Hept**
- **R₂ = H, Me, Ph**
- **R₃ = H, Me**
- **R₁,R₂ = Cy**
- **R₁,R₃ = indenyl derivatives, dihydronaphthalenyl, cyclohexenyl, cycloheptenyl, norbonenyl**
- **R₄ = Me, Et**
- **X = H, Me, Ph (if R₄ = Me)**

**Key words**
silicium  
boron  
yhdrosilylation  
alkenes

**Category**
Metal-Mediated Synthesis