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3-Silylated Cyclohexa-1,4-dienes as Precursors for Gaseous Hydrosilanes: The B(C₆F₅)₃-Catalyzed Transfer Hydrosilylation of Alkenes


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.

![Reaction Scheme]

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

**Selected examples:**

- ![Example 1](image1)
  - 85% yield
- ![Example 2](image2)
  - 85% yield
- ![Example 3](image3)
  - 61% yield
- ![Example 4](image4)
  - 69% yield, exo/endo > 95:5
- ![Example 5](image5)
  - 73% yield
- ![Example 6](image6)
  - 49% yield
- ![Example 7](image7)
  - 64% yield
- ![Example 8](image8)
  - 94% yield