Category

Key words

hydrosilylation

silicium boron

alkenes

Metal-Mediated Synthesis

A. SIMONNEAU, M. OESTREICH* (TECHNISCHE UNIVERSITÄT BERLIN, GERMANY) 3-Silylated Cyclohexa-1,4-dienes as Precursors for Gaseous Hydrosilanes: The $B(C_6F_5)_3$ -Catalyzed Transfer Hydrosilylation of Alkenes

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$B(C_6F_5)_3$ -Catalyzed Transfer Hydrosilylation of Alkenes

$$\begin{array}{c} \text{SiR}^4_2X \\ \\ \hline \\ R^1 \\ \hline \\ R^3 \\ \hline \\ \text{CH}_2\text{CI}_2, 25 \text{ °C} \\ \\ \hline \\ \text{R}^1 \\ \hline \\ \text{SiR}^4_2X \\ \\ \hline \\ \text{R}^3 \\ \\ \text{up to 94% yield} \\ \end{array}$$

R¹ = H, Hex, Ph, Hept

 $R^2 = H$, Me, Ph

 $R^3 = H$, Me

 $R^1, R^2 = Cy$

R¹,R³ = indenyl derivatives, dihydronaphthalenyl, cyclohexenyl, cycloheptenyl, norbonenyl

 $R^4 = Me$ F

X = H, Me, Ph (if $R^4 = Me$)

Selected examples:

Significance: Herein, the easy-to-handle $B(C_6F_5)_3$ -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 Me_3SiH and Me_2SiH_2 is prohibited because of safety considerations. Since the silylated cyclohexadienes are precursors for the analogous gaseous hydrosilanes, which are generated in situ by a $B(C_6F_5)_3$ -catalyzed release of these hydrosilanes, this protocol is a safe alternative for the hydrosilylation of alkenes.

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