Category

Synthesis of Heterocycles

Key Words

silaimidazolium ion

aromaticity

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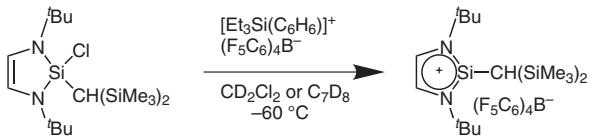

Significance: The 2-silaimidazolium ion, a new kind of heterocylic aromatic cation has been generated from the corresponding chlorosilane by a chloride abstraction using Et_3Si(benzene) tetrakis(pentafluorophenyl)borate. The silaimidazolium ion is stable at temperatures below –10 °C and was fully characterized by ^{1}H, ^{13}C and ^{29}Si NMR parameters which were compared with theoretical calculations [^{29}Si NMR 53.0 (CD_2Cl_2) and 53.2 (C_7D_8) for the 2-silaimidazolium compared to the chlorosilane (–17.7 in CD_2Cl_2)].

Comment: Silylene compounds have been a focus of structural interest for the last ten years (B. Tumanskii, P. Pine, Y. Apeloig, N. Hill, R. West *J. Am. Chem. Soc.* **2004**, *126*, 7786-7787). However, this represents the first synthesis and full characterization of a silaimidazolium ion which will undoubtedly trigger studies on scope and limitation of the synthetic route and reactivity, as well as efforts to derive new silanimine systems. For simple Si=N derivatives, see N. Wiberg, K. Schurz *J. Organomet. Chem.* **1988**, *341*, 145-164.

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