

Triethoxysilane, Tetraethoxysilane and Hexaethoxydisiloxane – Three Complementary Reagents for the Synthesis of Hydrogen-Rich Silylarenes

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Dedicated to Professor Ingo-Peter Lorenz on the occasion of his 60th birthday

Triethoxysilane $\text{HSi}(\text{OEt})_3$, tetraethoxysilane $\text{Si}(\text{OEt})_4$ and hexaethoxydisiloxane $\text{Si}_2\text{O}(\text{OEt})_6$ have been probed as reagents for the synthesis of hydrogen-rich silyl-arenes $\text{Ar}(\text{SiH}_3)_n$. A large set of new silyl-arenes, varying in their substitution patterns and grades, have been prepared. The results establish the two new silylating agents $\text{HSi}(\text{OEt})_3$ and $\text{Si}_2\text{O}(\text{OEt})_6$ as particularly useful alternatives to $\text{Si}(\text{OEt})_4$. The products, which include trihydrosilyl-substituted methylbenzenes, naphthalenes and ferrocenes, have been characterized by NMR and IR spectroscopy, mass spectrometry and single crystal X-ray diffraction.

Key words: Arylsilanes, Silylarenes, Trialkoxysilane, Tetraethoxysilane, Hexaethoxydisiloxane