

Synthesis and Structures of Simple (Silylmethyl)(methyl)ethers

Norbert W. Mitzel

Westfälische Wilhelms-Universität Münster, Institut für Anorganische und Analytische Chemie,
Wilhelm-Klemm-Str. 8, D-48149 Münster, Germany

Reprint requests to Prof. Dr. N. W. Mitzel. Fax (+49)251 83 36007. E-mail: Mitzel@uni-muenster.de

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The compound $\text{Cl}_3\text{SiCH}_2\text{OCH}_3$ was prepared by reacting $\text{ClCH}_2\text{OCH}_3$ with the $\text{Cl}_3\text{SiH}/\text{NEt}_3$ reagent. $\text{H}_3\text{SiCH}_2\text{OCH}_3$ and $\text{F}_3\text{SiCH}_2\text{OCH}_3$ were synthesized from $\text{Cl}_3\text{SiCH}_2\text{OCH}_3$ by reduction with LiAlH_4 and by fluorination with SbF_3 , respectively. The crystal structures of the low-melting compounds $\text{H}_3\text{SiCH}_2\text{OCH}_3$ and $\text{F}_3\text{SiCH}_2\text{OCH}_3$ were determined by X-ray diffraction of *in situ* grown crystals. Both compounds do not show any observable β -donor-acceptor interactions, but behave structurally like usual dialkylethers or silanes, as is obvious from the structural parameters in $\text{H}_3\text{SiCH}_2\text{OCH}_3$ ($\angle\text{SiCO}$ $108.4(3)$ – $109.4(3)^\circ$, $\angle\text{COC}$ $111.0(4)$ – $111.6(4)^\circ$) and in $\text{F}_3\text{SiCH}_2\text{OCH}_3$ ($\angle\text{SiCO}$ $107.1(1)$, $\angle\text{COC}$ $111.2(2)^\circ$). Earlier postulates of $\text{Si}\cdots\text{O}$ interactions in compounds with SiCO units could thus not be confirmed on a structural basis.

Key words: Silicon, Crystal Structure, Hypercoordination