

Synthesis and Reactivity of Ti(III) Tris(*tert*-butoxy)siloxy Complexes

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Dedicated to Professor Hubert Schmidbaur, in recognition of his many seminal contributions to inorganic chemistry

Reaction of $\text{TiCl}_3(\text{THF})_3$ with 3 equivalents of $\text{LiOSi}(\text{O}^t\text{Bu})_3$ produces the Ti(III) siloxide $\text{Ti}[\text{OSi}(\text{O}^t\text{Bu})_3]_3(\text{THF})_2$ (**1**), and a 1:4 ratio of the same reagents gives $\{\text{LiTi}[\text{OSi}(\text{O}^t\text{Bu})_3]_4\}_x$. Upon heating to 95 °C, compound **1** converts *via* THF ring-opening to $[(^t\text{BuO})_3\text{SiO}]_3\text{TiO}(\text{CH}_2)_4\text{Ti}[\text{OSi}(\text{O}^t\text{Bu})_3]_3$. The pyridine adduct $\text{Ti}[\text{OSi}(\text{O}^t\text{Bu})_3]_3(\text{pyr})_2$, and polymeric $\{\text{Ti}[\text{OSi}(\text{O}^t\text{Bu})_3]_3(4,4'\text{-bipyridine})\}_n$, are also described. Electronic spectra for the $\text{Ti}[\text{OSi}(\text{O}^t\text{Bu})_3]_3\text{L}_2$ complexes indicate D_{3h} symmetry, and similar results for the 4,4'-bipyridine adduct suggest a linear polymeric structure.

Key words: Titanium(III), Siloxide, Molecular Precursors, Coordination Polymer