Von Fluorsilylamiden zu Element-Silylamiden und Iminosilanen

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Ethyltrifluorosilane reacts with *tert*-butyllithium in a molar ratio 1:2 to give $Et(CMe_3)_2SiF$ (**1**), which forms the aminosilane, $Et(CMe_3)_2SiNH_2$ (**2**) in the reaction with $NaNH_2$. The lithium salt of **2** and $(Me_3C)_2SiF_2$ gives $(Me_3C)_2SiF—NHSi(CMe_3)_2Et$ (**3**). **3** reacts with BuLi to give the lithium salt, $(Me_3C)_2$ SiF—NLi—$Si(CMe_3)_2Et$ (**4**). *tert*-Butyl-(di-*tert*-butylfluoro)-silylaminoalanes $(Me_3C)_2SiF—NCMe_3—AlR_2$, R = Me (**5**), Et (**6**) are formed in the reaction of $(Me_3C)_2SiF—NLi$ CMe_3 (**I**) and $ClAlR_2$. The lithium salt $(Me_3C)_2SiF—NLi—Si(CMe_3)_2Me$ (**III**) reacts with BF_3 under formation of the bis(silyl)aminodifluoroborane $(Me_3C)_2SiF—N(BF_2)$ $Si(CMe_3)_2Me$ (**7**). In the reaction of **I** with F_3SiPh rotamers of $(Me_3C)_2SiF—NCMe_3$ SiF_2Ph (**8**) are obtained.

Stannyl-silylamines are prepared in reactions of the lithium salts $(Me_3C)_2SiF—NLiR$, R = CMe_3 (**I**), $SiF(CMe_3)_2$ (**II**); $Si(CMe_3)_2Me$ (**III**) and the chlorostannanes $ClSnMe_3$ (**9,10,11**) and Cl_2SnPh_2 (**12**), $(Me_3C)_2SiF—NSnMe_3—Si(CMe_3)_2R$ (**9**: R = F, **10**: R = Me), $(Me_3C)_2SiF—NSnMe_3CMe_3$ (**11**), $(Me_3C)_2SiF—NCMe_3SnClPh_2$ (**12**). The NMR spectra of **9** and **10** prove the existence of rotamers.

The reaction of **III** with Me_3SiOSO_2 CF_3 in *n*-hexane leads to the formation of the tris(silyl)amine **13**, $(Me_3C)SiF—NSiMe_3)_2Si(CMe_3)_2Me$. However, the analogous reaction of **III** and **4** with $Me_3SiOSO_2CF_3$ in thf leads to the formation of the stable iminosilanes **14** and **15**, $(Me_3C)_2Si═N—Si(CMe_3)R$, R = Me (**14**), Et (**15**) crystal structures of **7** and **12** are presented.

Key words: Aluminium-, Boryl-, Stannylaminosilanes, Rotational Barrier, Rotamers, Iminosilanes