$C(CF_3)_2OH \rightarrow OCH(CF_3)_2$ ISOMERISM IN SOME SULFUR AND PHOSPHORUS COMPOUNDS

GERD-VOLKER ROSCHENTHALER* AND D. DAKTERNIEKS
Lehrstuhl B für Anorganische Chemie der Technischen Universität Braunschweig, Pockelsstr. 4, D-33 Braunschweig

The insertion of $(CF_3)_2CO$ into the P-H bond of $Me_nH_{3-n}P$ yields $Me_nH_{2-n}PC(CF_3)_2OH$ and $Me_nH_{1-n}P[C(CF_3)_2OH]_2$ (n=0,1), respectively [1]. $MeP[C(CF_3)_2OH]_2$ rearranges giving the diphosphine $[MePOCH(CF_3)_2]_2$ and the phosphorane $MeP[OCH(CF_3)_2]_4$. Me_2PH reacts with $(CF_3)_2CO$ forming several products, e.g. $MePF[OCH(CF_3)_2]_2$ and Me_2PPMe_2 [1]. The phosphines tBu(R)PH(R=Me,tBu), however, add $(CF_3)_2CO$ giving rise to the phosphinites $tBu(R)POCH(CF_3)_2$, which furnish stable phosphonium salts upon treating with MeI. $(CF_3)_2CO$ inserts into the S-H bond of RSH to yield $RSC(CF_3)_2OH$ (R=H,Me,Ph), which were reacted with MeI, too. Reacting SCl_2 with $LiOCH(CF_3)_2$ gives $S[OCH(CF_3)_2]_2$ which is oxidised by chlorine to the sulfurane $ClS[OCH(CF_3)_2]_3$ [2]. The sulfurane is able to transfer $(CF_3)_2CHO$ groups to phosphorus(III) compounds, e.g. $P[OCH(CF_3)_2]_3$ and Me_3P yielding $P[OCH(CF_3)_2]_5$ and $[Me_3POCH(CF_3)_2]^+Cl^-$. $ClS[OCH(CF_3)_2]_3$ gives a stable salt upon reaction with $SbCl_5$, like $ClP[OCH(CF_3)_2]_4$. The mechanisms for these reactions are discussed.

1 G.-V. Röschenthaler, Z. Naturforsch. 33b, 311 (1978).
2 G.-V. Röschenthaler, Angew. Chem. 89, 900 (1977).

---

* Present address: Fachbereich 3, Universität Bremen, D-28 Bremen 33