## REACTION OF SILYL- AND GERMYLMERCURY COMPOUNDS WITH POTASSIUM CYANIDE INITIATED BY CROWN ETHERS

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We have found that stirring of an equimolar mixture of bis(tri-ethylgermyl)mercury (I), KCN, and 18crown-6 (II) or dibenzo-18-crown-6 (III) in a THF or acetonitrile medium (23 h,  $\sim 20^{\circ}$ C) leads to mercury (99.0%) and hexaethyldigermane (59.6%). In the absence of the crown ether the same reaction is over in 70 h at 65°. It is probable that polyethers (II) and (III) promote dissociation of KCN and the formed unsolvated CN<sup>-</sup> anions attack compound (I) by the scheme

 $\begin{array}{l} \mathrm{CN}^- + (\mathrm{Et}_3\mathrm{Ge})_2\mathrm{Hg} \rightarrow \mathrm{Et}_3\mathrm{Ge}\mathrm{CN} + \mathrm{Hg} + \mathrm{Et}_3\mathrm{Ge}^- \\ \mathrm{Et}_3\mathrm{Ge}^- + \mathrm{Et}_3\mathrm{Ge}\mathrm{CN} \rightarrow \mathrm{Et}_8\mathrm{Ge}_2 + \mathrm{CN}^- \end{array}$ 

In accordance with the scheme it was found that the analogous reaction with bis(triethylsilyl)mercury (IV) in the THF (29 h, ~20°) leads to mercury,  $Et_3SiCN$ , and red-colored complexes  $(Et_3Si)_nHgK_{n-2}$ , where n = 4 and (or) 3. The latter are formed by coordination of  $Et_3Si^-$  anions with (IV). Yields of products are correspondingly equal to 95.9, 38.3, and ~6% of those calculated with the equation

 $3(\text{Et}_3\text{Si})_2\text{Hg} + 2\text{ KCN } \xrightarrow[\text{THF}]{\text{(III) or (III)}} 2\text{ Hg} + 2\text{ Et}_3\text{SiCN} + (\text{Et}_3\text{Si})_4\text{HgK}_2$ 

Formation of the complexes was confirmed by reaction with  $CH_3COOH$  at ~20°, which leads to  $Et_3SiH$  (68.8%) and compound (IV). The latter upon subsequent irradiation of the mixture with UV light decomposes to mercury (77.4%) and  $Et_6Si_2$  (53.8%). Analogous complexes were obtained earlier by the reaction of potassium and  $(Me_3Si)_2Hg$  in cyclopentane [1].

Stirring a mixture of 9.10 g of ethyl(triethylgermyl)mercury (V), 1.34 g of KCN, and 1.67 g of (III) in 30 ml of CH<sub>3</sub>CN (23 h, ~20°) leads to mercury (100%),  $Et_6Ge_2$  (45.8%), and diethylmercury (43.5%), identified as EtHgCl with mp 192-193°. It is probable that CN<sup>-</sup> anions (like fluorine anions [2]) cause symmetrization of (V) with formation of  $Et_2Hg$  and compound (I), and the latter reacts with CN<sup>-</sup> as shown above.

All reactions were carried out in evacuated ampoules. The reaction products were identified by the methods of GLC, IR, and PMR spectroscopy.

## LITERATURE CITED

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