Water-soluble Crown Ether-substituted Organotin Halides as Ditopic Receptors for Sodium Salts

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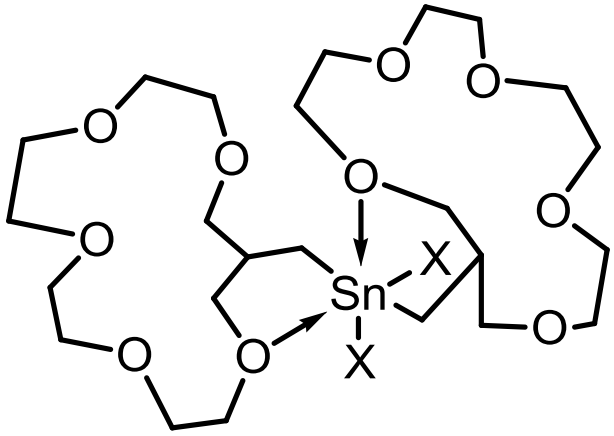
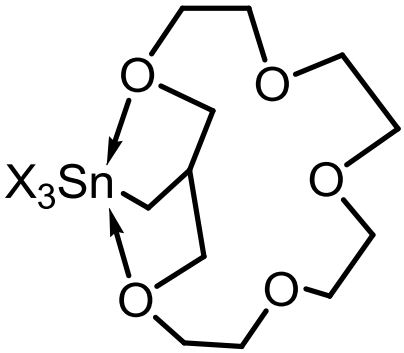
An important topic of host-guest chemistry is the simultaneous complexation of anions and cations by ditopic receptors and a great variety of such compounds has been published so far.[1] But among these, only few are crown ethers connected to Lewis-acidic organometal fragments by stable covalent bonds and even fewer display water-solubility. Within ongoing studies on this topic[2], we present here the novel intramolecularly coordinated crown ether-substituted tinhalides $X_2Sn\{-CH_2-[16]\text{-crown-}5\}_2$ (**1**, X = I; **2**, X = Br; **3**, X = Cl, **4**, X = F) and $X_3Sn\text{-}CH_2\text{-}[16]\text{-crown-}5$ (**5,** X = I; **6**, X = Br; **7**, X = Cl). Their structure in solution and their complexation behaviour towards the corresponding sodium salts in different solvents were investigated by NMR-spectroscopy. Compounds **5** - **7** were also characterized in the solid state by single crystal x-ray diffraction analysis.





1, X = I
2, X = Br
3, X = Cl
4, X = F

5, X = I
6, X = Br
7, X = Cl

References:

[1] B. D. Smith in *Macrocyclic Chemistry: Current Trend and Future Perspectives* (Ed.: K. Gloe), Springer, Dordrecht, **2005**, pp. 137-151. [2] a) G. Reeske, G. Bradtmöller, M. Schürmann, K. Jurkschat, *Chemistry: A European Journal* **2007**, *13*, 10239. b) G. Reeske, M. Schürmann and K. Jurkschat , *Dalton Trans*. **2008**, *26*, 3398. c) A. C. Tagne Kuate, G. Reeske, M. Schürmann, B. Costisella, K. Jurkschat, *Organometallics* **2008**, *27*, 5577. d) A. C. Tagne Kuate, L. Iovkova, W. Hiller, M. Schürmann, K. Jurkschat, *Organometallics* **2010**, in press (DOI: 10.1021/om100409v).