

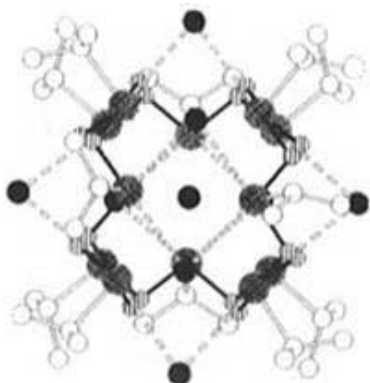
s9.m3.p13 The Structure of a Novel Macrocyclic Organotellurate(IV). H. Citeau, K. Kirschbaum, O. Conrad and D.M. Giolando, *Department of Chemistry, University of Toledo, 2801 W. Bancroft, Toledo, Oh, 43606.*

Keywords: molecular interactions, supramolecular assemblies, organotellurate.

A fascinating macrocyclic structure of alternating tellurium and oxygen atoms was found in crystals of $[\text{Li}(\text{THF})_4][\{\text{Te}_{12}\text{O}_{16}\{\text{Pr}_{12}\text{Br}_4\{\text{Li}(\text{THF})\text{Br}\}_4\}\text{Br}]2\text{THF}$.

Bridging bromine atoms and outwardly directed isopropyl groups on the tellurium atoms complete this molecule to an almost spherical entity. Additionally, four bridging lithium bromide units connected to four four-membered Te-O rings further stabilize the three-dimensional arrangement. The overall neutral molecule possesses a non-crystallographic $4\bar{6}$ symmetry and acts as a host to a central bromide ion in its cavity.

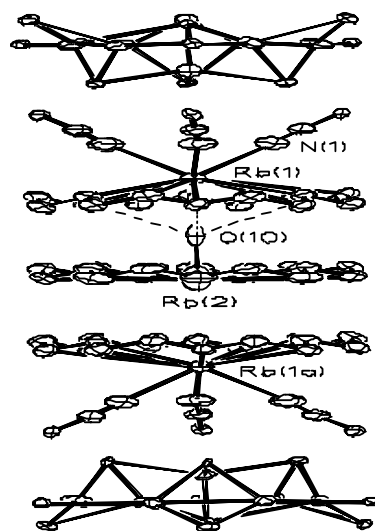
The corresponding colorless $\text{Li}(\text{THF})_4$ salt crystallizes with two uncoordinated THF molecules in the asymmetric unit in the monoclinic space group $\text{P}2_1$ with cell parameters (140 K) of $a = 15.1957(4)$, $b = 27.6216(8)$, $c = 16.0219(3)$ Å and $\beta = 116.572(1)^\circ$.



s9.m3.p14 Crystal engineering towards desing of macrocyclic coordination compounds: the new family of the iodocuprates(I) complexes of 18-crown-6. J.A. Rusanova, K.V. Domasevitch, V.N. Kokozay, *Chemistry Dpt., Kiev University, Volodimirska St. 64, Kiev 252033, Ukraine, E-mail: julia@anorgchemie.univ.kiev.ua;*

Keywords: structural aspects, supramolecular assemblies.

The latest positions on the well known $\text{M}(\text{crown ether})$ systems are reviewed [1]. Despite of the long term of extensive studies, the factors affecting their structural chemistry is not readily comprehensible and the relations between the metal ion and crown ether in the solid state may be determined by the nature of the counter anion. The crystal structure of the complex may be determined mostly by the packing forces of the highly symmetrical bulky fragments.



This suggestion can be illustrated on example of Rb and Cs complexes which crystallized in the same space group with close cell parameters ($\approx 28\text{Å}$) - $\text{Cs}_9(18\text{c}6)_9 \cdot 24\text{I}_3$ ($a = 28,2558(1)$ Å) [2] and $\text{Rb}_9(18\text{c}6)_9 \cdot \text{Cu}_{18}\text{I}_{27} \cdot 6\text{CH}_3\text{CN} \cdot \text{H}_2\text{O}$ ($a = 27,8904(7)$ Å).

In the Cs complex we have registered formation of novel triple-decker club sandwiches $\text{Cs}_3(18\text{c}6)_3^{3+}$, and the structure of the rubidium compound was of special interest in this context.

Herein we report the synthesis and crystal structure of the novel Rb complex. The lattice consists of $[\text{Rb}(18\text{c}6)(\text{CH}_3\text{CN})_3]^+$ and two types of $[\text{Rb}(18\text{c}6)]^+$ cations, two different iodocuprate(I) moieties $\text{Cu}_4\text{I}_7^{3-}$ and $\text{Cu}_7\text{I}_{10}^{3-}$, and water molecules. The space in the crystal, corresponding to the $[\{\text{Cs}_3(18\text{c}6)_3\}_2\{\text{Cu}_7\text{I}_{10}\}\{\text{Cu}_{13}\text{I}_{14}\}]$ supramolecular unit, is occupied by ensembles of two $\text{Rb}(18\text{c}6)(\text{CH}_3\text{CN})_3^+$ cations, $\text{Rb}(18\text{c}6)^+$ cation, water molecule and two $\{\text{Cu}_7\text{I}_{10}\}^{3-}$ clusters. These fragments of the Cs and Rb structures have different composition and structure, but the same charge, shape and size.

Thas, we can conclude that the packing forces of the highly symmetrical bulky fragments may result in formation of the new supramolecular families of compounds that are isomorphous but have a different structure and /or different composition.

[1] A.V. Bajaj and N.S. Poonia, *Coord. Chem. Rev.*, **87**, 55 (1988).

[2] K.V. Domasevitch, J.A. Rusanova, et al., *J.Chem. Soc., Dalton Trans.*, 1999, 3087.