show, that a repulsion of the lone pairs on the As atoms is evident. If the coordination number of the Vb second row (2) or third row elements respectively increases to four and the valence state from three to five also from atherical reasons there is no free coordination site available and therefore the usual cis trans configuration is formed in the case of III and IV (A. Gieren et al., J. Organ. Chem. (1980) 467, 68). The S-N bond distances in I - IV (1.505-1.529\(\AA\)) show no significant x-interactions between SN, moieties and their substituents. A common feature of all known sulphur dinitriles, the coplanarity of SN, units with their bonding neighbours. It also fulfilled in I - IV.

The reaction of I with Os(A\(\text{CO}\))\(_2\) yields a cluster V in which the sulphur dinitrile subunit is still retained and co-planar with Os(3) and As(2). Os(2) deviates by only 0.63 \(\AA\) from this plane. The S(1)-N(2) bond length of 1.53 \(\AA\) is comparable to those in I - IV whereas the marginally lengthened S(1)-N(1) bond of 1.55 \(\AA\) may be attributed to the three-fold coordination of the latter atom.

**THE CRYSTAL STRUCTURES OF TWO POLYIODIDE SALTS OF ORGANIC CATIONS.**

By T. Hübner and A. Gieren, Max-Planck-Institut für Biochemie, Abt. 1, Strukturforschung 1. 8033 Martinsried, FRG.

We have performed the X-ray structure analyses of the polyiodides 2,1,3-benzoselenadiazolium pentaiodide I and \(\text{PB}_2\text{N}'\text{N}(\text{CH}_3)\text{N}(\text{CH}_3)\text{N}^{+}\text{PB}_2\text{N}'\text{N}(\text{CH}_3)\text{N}(\text{CH}_3)\text{N}^{	ext{+PB}}\) and \(\text{PB}_2\text{N}'\text{N}(\text{CH}_3)\text{N}(\text{CH}_3)\text{N}^{+}\text{PB}_2\text{N}'\text{N}(\text{CH}_3)\text{N}(\text{CH}_3)\text{N}^{	ext{+PB}}\text{Se}_{10}\text{I}_{10}\) (I).

The crystallographic results are: 1: \(\text{Pb}_2\text{N}(\text{CH}_3)\text{N}^+\text{Pb}_2\), \(a = 9.320(3), b = 13.812(2), c = 17.156(3)\), \(\beta = 86.31(2)\), \(\gamma = 91.33(2)\).

Bond angles in both aliphatic and aromatic groups of sulfides are larger than in the sulfoxides, the order being sulfone>sulfide>sulfoxide. The same trend, which is not predicted by simple models for bonding, was found also in diffusion studies of gaseous species (Margitall et al., Acta Chem. Scand. (1979) 9, 279).

We observe that the aliphatic groups of the S-C bonds (non-term.) are very similar in the sulfides and sulfoxides, and longer than in the sulfones. In the aromatic series S-C distances in the sulfides and the sulfones are comparable and both shorter than in the sulfoxides.

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The difference between terminal and non-terminal S-C bonds in sulfones, 0.023\(\AA\), remains also with thermal corrected parameters refinement based on 88K data with \(\sin \theta /\lambda > 0.90\). Charge density features sustain that these bonds are different.