DOI: 10.1002/zaac.200((will be filled in by the editorial staff))

ABSTRACT

The crystal structures of $[Cu(MeCN)_4]_2[Pn_3X_{11}]$ with *Pn* = As, Sb; *X* = Br, I

Christoph Vitzthumecker,[a] Arno Pfitzner*[a]

* Prof. Dr. A. Pfitzner
E-Mail: Arno.Pfitzner@chemie.uni-regensburg.de

[a] Institut für Anorganische Chemie
Universität Regensburg
Universitätsstraße 31
93040 Regensburg, Germany

Keywords: Pnicogen halide;Tetrakis(acetonitrile)copper(I)

$[Cu(MeCN)_4]_2[Pn_3X_{11}]$ was synthesized via a solvothermal reaction of copper(I)halide with the respective pnicogen(III)halide in acetonitrile with *Pn* = As, Sb, and *X* = Br, I. The compounds were obtained from solvothermal syntheses at 140 °C for 5 days. All four compounds crystallize in the space group $P\bar{3}c1$ (no. 165) with the unit cell dimensions given in Table 1.

Table1. Latticeparameters

Anion	*a*/Å	*c*/Å	*V*/Å^3	Z
$As_3Br_{11}^{2-}$	11.4751(2)	18.2466(5)	2080.78(8)	2
$As_3I_{11}^{2-}$	11.7082(1)	19.5975(2)	2326.54(4)	2
$Sb_3Br_{11}^{2-}$	11.6569(1)	18.5269(3)	2180.22(4)	2
$Sb_3I_{11}^{2-}$	11.8512(1)	19.8591(2)	2415.54(4)	2

$[Cu(MeCN)_4]_2[Sb_3I_{11}]$ was already reported in literature,[1] and all four compounds are isotypic. They show clusters of three condensed pnicogen halide octahedra, and tetrakis(acetonitrile)copper tetrahedra, see Figure 1.

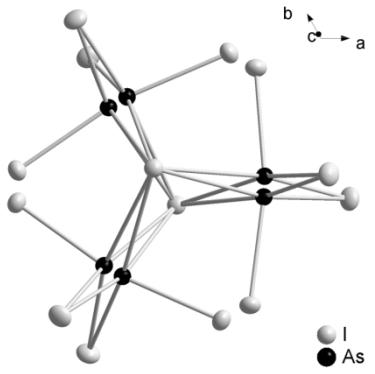

Figure 1. Condensed, octahedral units $[As_3I_{11}]^{2-}$ in $[Cu(MeCN)_4]_2[As_3I_{11}]$.

[1] S. Pohl, R. Lotz, W. Saak, D. Haase, *Angew. Chem.***1989**, 101, 355-357