One- and Two- Dimensional Copper(I) Halide Based Coordination Polymers with Bridging Pyridazine or Pyrimidine Ligands

T. Kromp and W. S. Sheldrick

Lehrstuhl für Analytische Chemie, Ruhr-Universität Bochum, D-44780 Bochum, Germany

* Reprint requests to Prof. Dr. W. S. Sheldrick. E-mail: shel@anachem.ruhr-uni-bochum.de

Z. Naturforsch. 54 b, 1175–1180 (1999); received June 9, 1999

Copper(I) Halides, Pyridazine, Pyrimidine, Coordination Polymers

1-Dimensional coordination polymers \([\text{CuX}-(\mu-\text{pydz})]\) 1 - 3 (X = Cl, Br, I; pydz = pyridazine) may be prepared by self-assembly in acetonitrile solution at 120°C (1) or room temperature (2, 3). Individual chains contain \((\text{CuX})_2\) rings and dimeric \([\text{Cu}-(\mu-\text{pydz})]_2\) substructures.

At a 2:1 molar ratio treatment of CuI with pydz in acetonitrile affords the lamellar complex \([\text{CuI}]_2-(\mu-\text{pydz})\) 4 whose novel \([\text{CuI}]_2\) sheets contain fused 4-, 6- and 8-membered \((\text{CuI})_n\) rings and are stabilized by pydz bridging between adjacent Cu atoms. In contrast, \([\text{CuBr}]_2-(\mu-\text{pym})_2\) 5 (pym = pyrimidine) contains separated \([\text{CuBr}]_2\) chains and \((\text{CuBr})_2\) rings as participating building units.