

The crystal and molecular structures of two bromo bis(N,N-dipropylthiocarbamoyl) sulfidocopper(I) complexes

Victoriano, Luis

Vega, Andrés

Garland, María Teresa

The reaction of copper(I) bromide, CuBr, with the tetraalkylthiurammonosulfides R₄tms (R = iPr, nPr) affords the copper(I) complexes iPr₄tmsCuBr (I) (C₁₄H₂₈BrCuN₂S₂, orthorhombic, Pna2₁, Z = 4, a = 12.487(2), b = 12.699(2), c = 12.742(2) Å) and nPr₄tmsCuBr (II) (C₁₄H₂₈BrCuN₂S₃, monoclinic, P2₁/n, Z = 4, a = 9.092(5), b = 23.408(11), c = 10.082(7) Å, $\beta = 104.90(5)^\circ$), which exist in the solid as monomeric units featuring three-coordinate copper(I). The ligands are bidentate and coordination is completed by the bromine atoms. The configurations of the six-membered metal-ligand ring in (I) and (II) are more severely distorted than the previously reported structurally related complexes of ethyl series. The crystal structural studies are complemented and confirmed by IR and ¹H-NMR spectroscopies, as well as room temperature, magnetic, solution conductivity, and molecular weight studies.