Synthesis, Characterization and Crystal Structure of new Transition Metal Compounds of Thiocyanate

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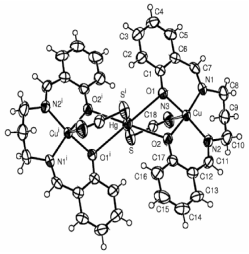
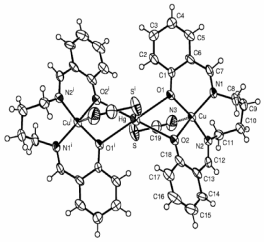
Two similar hetero-trinuclear centrosymmetric Cu-Hg-Cu Schiff base complexes were prepared and characterized by elemental analysis, NMR, IR and UV-Vis spectroscopy. The crystal structures of the title compounds reveal that $Hg[Cu(C_{17}H_{16}N_2O_2)SCN]_2$ (I) crystallizes in the triclinic $P\bar{1}$ space group and $Hg[Cu(C_{18}H_{18}N_2O_2)SCN]_2$ (II) crystallizes in the monoclinic $P2_1/c$ space group. The central Hg atom of the compounds, which is located on an inversion centre, has a distorted octahedral coordination geometry. In both compounds, there are long range interactions between Cu and N atoms of the bridging SCN group at the axial position. The coordination geometry of the inversion-related terminal Cu atoms of the compounds is square-pyramidal. The Cu-Hg pairs are triple bridged by the O atoms of the Schiff base ligands and by the SCN groups. The Cu…Hg distance is 3.7623(9) Å (I) and 3.7778(17) Å (II).



I



II

Keywords: crystal structure, thiocyanate complexes, copper(II) and mercury(II) complexes