The Crystal Structures of [N,N'-Bis(3-methoxysalicylidene)-1,3-diaminopropane]nickel(II) and -copper(II)

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Z. Naturforsch. **59b,** 228 – 232 (2004); received October 2, 2003

[N,N′′-Bis(3-methoxysalicylidene)-1,3-diaminopropane]nickel(II) dihydrate [Ni($C_{19}H_{20}N_2O_4$)·2(H_2O)] **1** and [N,N′-bis(3-methoxysalicylidene)-1,4-diaminobutane]copper(II) [Cu($C_{20}H_{22}N_2O_4$)] **2** have been synthesized and their crystal structures determined. Crystals of compound **1** are orthorhombic, space group *Pnma*, $a = 7.509(3)$, $b = 22.070(7)$, $c = 11.532(4)$ Å, $V = 1611.1(12)$ Å^3, $Z = 4$ and $D_c = 1.498$ g·cm^{-3}. The molecule **1** has mirror symmetry, but the ligand is not planar. The two parts of the Schiff base moieties are folded so as to form an angle of 21.6(1)°. The Ni atom is in a distorted octahedral geometry and coordinated by the donor atoms of the ligand in the horizontal plane and of two water molecules. Crystals of compound **2** are monoclinic, space group $P2_1/c$, $a = 9.488(1)$, $b = 21.918(3)$, $c = 8.413(1)$ Å, $\beta = 91.45(1)°$, $V = 1749.0(4)$ Å^3, $Z = 4$ and $D_c = 1.587$ g·cm^{-3}. The Cu atom is coordinated by an N_2O_2 donor set from the imine-phenol ligand in a distorted planar geometry, with the two phenolate O atoms deprotonated. The Cu–O bond lengths are 1.854(3) and 1.868(3) Å. The Cu–N bond lengths are 1.931(3) and 1.950(3) Å, the dihedral angle between the two 3-methoxysalicylidene groups is 43.4(1)°.

Key words: Schiff Base Complexes, Nickel(II) Complex, Copper(II) Complex, Square-Planar Coordination, Octahedral Coordination