

CRYSTAL STRUCTURES OF COORDINATION COMPOUNDS OF AZOMETHINE LIGANDS

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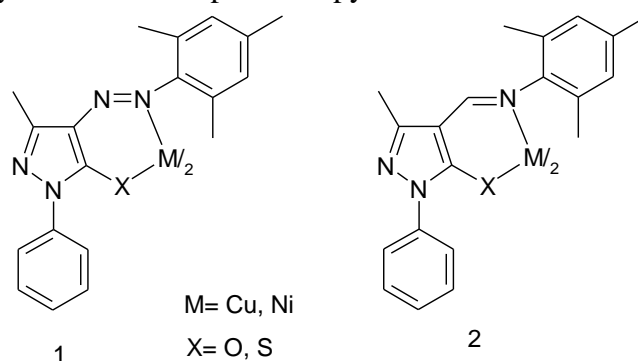
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The series of mononuclear Cu(II) and Ni(II) complexes with azomethine ligands (**1**, **2**) have been synthesized. The structures of the complexes were determined by X-ray powder and single-crystal diffraction analysis and XAFS spectroscopy.



The coordination compounds **1**, **2** (M=Ni, Cu; X=O) crystallize in the low symmetry triclinic space group P -1(2) with close parameters of unit cells:

1 (M=Cu, X=O) a= 8.6183(6) Å, b= 13.9504 (7) Å, c= 15.1615 (1) Å,

$\alpha= 75.267(6)^\circ$, $\beta=77.171(3)^\circ$, $\gamma=89.321(6)^\circ$, V= 1716.98 Å³;

2 (M=Ni, X=O) a= 8.5802(1) Å, b= 13.7962 (2) Å, c= 15.3475 (2) Å,

$\alpha= 76.400(7)^\circ$, $\beta=77.283(9)^\circ$, $\gamma=89.476(8)^\circ$, V= 1720.75 Å³ and

2 (M=Cu, X=O) a=8.6556(13) Å, b=14.113(2) Å, c=15.186(2) Å,

$\alpha=75.17(0)^\circ$, $\beta=77.38(0)^\circ$, $\gamma=89.26(0)^\circ$, V=1748.09 Å³.

However the copper complex **2** (X=S) crystallizes in the monoclinic space group P 2/c (15) with greater parameters of unit cells: a= 21.6069(8) Å, b= 9.7740(4) Å, c= 19.2019(1) Å, $\alpha = 90$, $\beta = 117.754(3)^\circ$, $\gamma = 90$; V= 3588.64 Å³.

From X-ray single crystal diffraction and EXAFS data of these complexes it was determined, that the coordination geometry of copper and nickel ions in complexes **1**, **2** (M=Ni, Cu; X=O) is distorted planar with the coordination sites occupied by N and O ions of azomethine ligands.

In the case of the copper complex **2** (X=S), X-ray single crystal diffraction results supported a distorted tetragonal geometry around copper ions.