Spectroscopic, Magnetic and Crystal Structure Analysis of Diammine-bis(2,6-dibromo-4-chlorophenolato-O)copper(II)

Gülsün Gökağaç[a], Leyla Tatar Yildirim[b], Muammer Sonsuz[a], and Fatih Şen[a]

[a] Middle East Technical University, Department of Chemistry, 06531 Ankara, Turkey
[b] Hacettepe University, Department of Engineering Physics, Beytepe 06800, Ankara, Turkey

Reprint requests to Assoc. Prof. Dr. G. Gökağaç. E-mail: ggulsun@metu.edu.tr

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The $[Cu(C_6H_2Br_2ClO)_2(NH_3)_2]$ complex was synthesized and characterized by XRD, UV/vis, FTIR, DSC, elemental analysis and magnetic susceptibility measurements. The structural analysis of the title complex indicated that it is a monomeric centrosymmetric compound which crystallizes in the monoclinic system, $P2_1/c$, and has a *trans*-planar CuO_2N_2 coordination [Cu-O 1.940(5) and Cu-N 1.978(7) Å]. In the coordination sphere of the Cu atom, there are long range interactions with Br2 and the centrosymetrically related Br2i (i: $-x, -y, -z$) atoms [Cu-Br2: 3.079(2) Å], resulting in a tetragonally elongated octahedral structure for the $CuO_2N_2Br_2$ coordination. The molecules form one-dimensional chains along the *x*-axis of the unit cell held together by intermolecular hydrogen bonds.

Key words: UV/vis, FTIR, DSC, Crystal Structure, Cu(II) Complex, Magnetic Susceptibility