

Synthesis and crystal structure analyses of Bis[N(2-chloro-phenyl) 4-nitro-thiobenzamidato]mercury(II) complex

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Abstract: In this research N(2-chloro-phenyl)4-nitro-thiobenzamide as a ligand was synthesized. One mmol of mercury oxide was added to the solution of 1 mmol ligand in 45 ml chloroform and after 90 min the mixture through celite or BaS to remove unreacted mercury(II) compounds. The yellow crystals, which formed by slow evaporization, was separated and recrystallized from chloroform as fine yellow crystals with 87% yield and dried in vacuo. The crystal structure of above complex was determined by single crystal X-ray diffraction method. The complex crystals in a monoclinic unit cell with $a = 8.2822(9) \text{ \AA}$, $b = 12.2907(9) \text{ \AA}$, $c = 13.1243(13) \text{ \AA}$, $\beta = 90^\circ$, $\alpha = 98.729(5)^\circ$, $\gamma = 90^\circ$ and $Z = 2$ and space group P21/c. The S-Hg-S is linear with angle of 180° .

Keywords: *Crystal structure, Mercury(II) complex, Thiobenzamide.*