

MS14-P18 | CRYSTAL STRUCTURES OF THE FIRST POLYMERIC Cu(II) COMPLEXES WITH THIOSEMICARBAZONE METHYL PYRUVATE

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Thiosemicarbazones and their metal complexes are in the focus of many researchers due to easy complexation with d- and p-metals, but also wide spectrum of biological activities. Among them, pyruvic acid thiosemicarbazone (H₂pt) stands out. A large number of metal complexes with this ligand are characterized and tridentate and tetradentate modes of coordination are found.

The synthesis and crystal structure of two polymeric complexes of Cu(II) of the general formula [Cu(μ-Hpt)H₂O]X (X = NO₃⁻ (1), ClO₄⁻ (2)) are described. Complex 1 is obtained in the reaction of ethanolic solution of Cu(NO₃)₂·3H₂O and H₂pt, while the reaction of acetone solution of Cu(ClO₄)₂ and methyl pyruvate thiosemicarbazone yielded in formation of complex 2.

Molecular structures of the complexes 1 and 2 consist of polymeric monocation [Cu(μ-Hpt)H₂O]⁺ and NO₃⁻ or ClO₄⁻ anion. In both complexes copper(II) is situated in ideal square-pyramidal surroundings (τ=0.00). Basal plane is defined by sulphur atom S1, azomethine nitrogen N1 and carboxylate oxygen O1 from the same asymmetric unit, while the fourth coordination place is occupied by bridging carboxylate oxygen of the neighbouring asymmetric unit. The apical position is occupied by the oxygen atom of the coordinated water molecule. In both complexes, the ligand is coordinated in monoanionic form.