

STUDY OF THE ORIENTATION OF AXIAL AMINO-LIGANDS IN SOME Co(III) DIOXIMATES

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Abstract. A comparative study of the orientation of the axial ligands relative to the equatorial plane in Co(III) α -dioximates was performed. Co(III) α -dioximates obtained by us and those founded in Cambridge data base have been selected for this study. As a result of this study it was observed that anions from the external sphere and the solvent molecules contribute to the orientation of the axial ligands, such as thiocarbamide and selenourea. For the ligands such as aniline and sulfanilamide it is more advantageous the almost parallel orientation, when π - π interactions between the aromatic rings of the ligand and metallocycle of the equatorial plane are formed. Solvent molecules such as water can be found in the crystal structure in the vicinity of thiocarbamide and selenourea ligands, which are oriented parallel to the equatorial plane. In the case when diphenylglyoxime is located in the equatorial plane, water can be found in the vicinity of parallel and perpendicularly oriented ligands. The molecules within the crystal are arranged so closely that there are no gaps in the crystal lattice of these compounds.

Keywords: Co(III) dioximates, fluorine containing anions, ligands orientation, H-bonds, biostimulation properties.