

***SYNTHESIS AND CHARACTERIZATION OF COPPER (II) &
CADMIUM (II) COMPLEXES OF SOME HYDROXAMATE
DERIVATIVES.***



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Abstract

Hydroxamic acids are N-hydroxy amides, derivatives of hydroxylamine and carboxylic acids. Hydroxamic acids are naturally occurring or synthetic weak organic acids. They contain the oxime ($-N-OH$) and the carbonyl ($C=O$) groups. Two possible hydroxamic acid tautomers are exist, one the keto isomer, is predominant under acidic conditions, and the other enol form is stable in alkaline conditions. The presence of (E) and (Z) isomers of hydroxamic acid anions are extending the structural diversity. Hydroxamic acids are powerful metal ion chelators. Hydroxamic acids are an important class of bioactive compounds with wide uses as anti-bacterial, or anti-inflammatory agents and a key component of many natural products, mainly siderophores in lower organisms. It is used as inhibitors of hypertension, tumor growth, inflammation, infectious agents, asthma, arthritis, Alhimers diseases and more.

In this study, copper (II) (SRC1 and SRC3) and cadmium (II) (SRC2 and SRC4) complexes were synthesized from potassium hydroxamate derivative ligands and they were characterized by using various techniques such as Infra-Red spectral studies, electronic spectral studies, melting point and conductivity measurements. The electronic spectral study and the melting point analysis revealed that the ligands are coordinated to the metal centre. IR and conductivity analyses confirm the coordination of hydroxamate ions as O, O-bidentate mode (*via* the hydroxyl oxygen and the carbonyl oxygen atoms of the ligands) to the metal centre. The tentative molecular structures for the newly formed complexes are also given.

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