

Spectral and Thermal Studies of Zn (II) 1,2-Naphthoquinone Oximates

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Oxime derivatives of 1,2-naphthoquinone, which include, 1,2-naphthoquinone-1-Oxime, 1,2-naphthoquinone-2-Oxime and 1,2-naphthoquinone-1,2-Dioxime are of special interest in coordination and structural inorganic chemistry. Their characteristic features include (a) enhanced chelating ability (b) exhibition of position isomerism by monoximes (c) comparative aspects between O-N donor system and N-N donor system and (d) powerful antimicrobial activities.

Extensive work on transition metal chelates as well as chelates of lanthanides and actinides of these ligands have been reported. However, work on non-transition metal chelates is scanty. Therefore 1,2-quinone oximates of some non transition metals are selected for detail study and as a part of this work, synthesis and structural investigations of Zn (II) chelates of these three 1,2-naphthoquinone oximates have been carried out.

The synthesis of the three Zn (II) chelates has been done by following the methods established in our Laboratory and their characterization is done through elemental analysis.

For structural investigations, thermal analysis based on thermogravimetry and spectral studies based on XRD, IR and UV spectroscopy has been carried out.

Zn (II) 1,2-naphthoquinone-1-oximate is green in color, its molecular composition being ML_2 while the remaining two chelates are brown colored, their molecular composition being $ML_2 \cdot 2H_2O$.

The results of spectral and thermal investigations are employed to examine the effect of position isomerism and change of donor system from O-N to N-N on structural aspects of Zn (II) chelates.