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Thermal Decomposition Kinetics of Anilino-p-chlorophenylglyoxime Complexes of Cobalt (II), Nickel (II) and Copper (II)

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**Abstract:** The Co(II), Ni(II) and Cu(II) complexes of anilino-p-chlorophenylglyoxime were synthesised. The thermal behaviour of all complexes was studied by DTA and TG. It was found that pyrolytic decomposition occurs with melting in metal complexes and that metal oxides remain as final products of the metal complexes. A GC-MS combined system was used to identify the products during pyrolytic decomposition. The pyrolytic end products were identified by x-ray powder diffraction. The orders,  $n$ , the activation energies,  $E^*$ , the pre-exponential factors,  $A$ , and the entropies,  $\Delta S^*$ , of thermal decomposition reactions were derived from thermogravimetric and differential thermogravimetric curves. The kinetic analysis of the thermogravimetric data was performed by using the Coats-Redfern and Horowitz-Metzger methods.

**Key Words:** Anilino-p-chlorophenylglyoxime, Cu(II)-, Ni(II)- and Co(II)-complexes, Thermal behaviour, Thermal decomposition kinetic, Pyrolysis, DTA/TG/DTG

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