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Thermal behaviour of copper(II), nickel(II), cobalt(II) and palladium(II) complexes of N,N-dimethyl-N'-benzoylthiourea

Göktürk AVŞAR, Nevzat KÜLCÜ, Hakan ARSLAN

Department of Chemistry, Faculty of Arts and Sciences, Mersin University,
Mersin-TURKEY

e-mail: arslanh@mersin.edu.tr

 [Keywords](#)
 [Authors](#)



chem@tubitak.gov.tr

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Abstract: N,N-dimethyl-N'-benzoylthiourea (DMBT) complexes of Ni(II), Cu(II), Co(II) and Pd(II) were synthesised. The thermal decomposition of these metal complexes was investigated by TG, DTG and DTA. 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 thermoanalytical data of these complexes are presented in this communication. The kinetic analysis of the thermogravimetric data was performed by using the Coats-Redfern and Horowitz-Metzger methods. All the metal complexes except Cu(II) complex undergo decomposition in three stages and NiS, CoS, Pd, and Cu remained as end-products of the complexes.

Key Words: Complexes, N,N-dimethyl-N'-benzoylthiourea, Thermal behaviour, Thermal decomposition kinetics.

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