
Study of the thermal behaviour and structure of Mg(II) in the heterocyclic complexes

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Abstract Thermogravimetry (TG), differential thermal analysis (DTA) and other analytical methods have been applied to the investigation of the thermal behaviour and structure of complexes Mg (pc)(na)₃ 3 H₂O (I), and Mg (pc)(caf)₂ 4 H₂O (II) where pc = 2,6 -pyridinedicarboxylate, na = nicotinamide, and caf = caffeine. The thermal decomposition of these compounds is multi-stage processes. The chemical composition of the complexes, the solid intermediates and the resultant product of thermolysis have been identified by means of elemental analysis and complexometric titration. Schemes of destruction of these complexes are suggested. The thermal stability of the complexes can be ordered in the sequence (II)<(I). IR data suggested a unidutate coordination of carboxylates to Mg (II) in complexes I–II.

Keywords: DTA, heterocyclic complexes, Mg(II) complexes, IR-spectra, TG.
