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Abstract

The aim of this study was to investigate thermal behavior of the new complex with formula $[\text{Cu}(\text{ala})\text{cyc}](\text{ClO}_4)_2 \cdot 2.5\text{H}_2\text{O}$. The complex was isolated and previously characterized by: elemental analysis (C, H, N), molar conductivity, UV/Vis and FTIR spectroscopy and magnetic measurements at room temperature. The sixcoordinate octahedral geometry around Cu(II) complexes was proposed. The experimental data suggested that the tetradentate ligand cyclam was coordinated to metals through four N donors and the amino carboxylate ligand coordinated via carboxylate ion. Investigate of thermal stability can be crucial in confirming the structure as well as in assessing the applicability of new compounds. The thermal properties of these complex have been investigated by thermogravimetric (TG) and differential thermal analysis (DTA). Therefore, TG-DTA analysis indicates that investigated complex decomposes exothermally in a single step in the range of 310 - 400 °C.

Keywords: copper(II) complex, cyclam, alanine, TG-DTA analysis.