

Solution Thermochemical Properties of the Bis(β -diimino-tetracyano-pyrrolizinido)Nickel(II) Complex

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Among the metal complex dyes **1** having the basic formula of $M(C_{11}N_7H_2)_2$, the nickel (II) derivative shows a peculiar behavior in solution: its color changes from blue at 248 K to pale yellow at 373 K. The largest variation of absorbance with temperature has been observed in AcOEt solution in the range of 278 – 313 K, and the corresponding specific value is $-4.75 \times 10^2 M^{-1}cm^{-1}K^{-1}$. Reversibility, reproducibility and good response make it suitable for the construction of optical temperature sensors.

1. Introduction

We are currently investigating the chemico-physical properties of the metal complexes of pyrrolizines **1**, $M(C_{11}N_7H_2)_2$, the structure of which is shown in Fig. 1, with the aim of evaluating them as functional materials. Metal complexes **1**, which are neutral, planar and centrosymmetric molecules, were synthesized and characterized by us for the first time.⁽¹⁻⁶⁾ They can be applied in the fabrication of technological devices since they represent an important and new class of dyes, showing extreme similarity to the metal-phthalocyanines.⁽⁷⁾

In this note we report the thermochemical properties of bis(β -diimino-tetracyano-pyrrolizinido)nickel(II) complex (**1a**) in ethyl acetate (AcOEt) solution.