Crystal and Molecular Structure of Bis-n-octyl-hydroxy-naphthaldiminato Cu(II). A Study Including Magnetic Properties of Also N-dodecyl and N-octadecyl Derivatives

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N-R alkyl substituted Schiff bases with R-aliphatic long chains have been used to synthesize a variety of coordination compounds for liquid crystals and Langmuir-Blodgett films applications [1,2].

The present study shows the synthesis and X-ray structure of bis N-octyl-hydroxynaphthaldiminato-copper(II) complex. It crystallizes in the R-9 (#148) space group with a = b = 42.273(25), c = 5.164(3), $\alpha = \beta = 90°$, $\gamma = 120°$, Z = 9, V = 7992(14) A^3 . A total of 2020 reflections with $F>6\sigma(F)$ were measured, yielding R (Rw) = 0.052 (0.069) values. The molecular structure shows the copper atom in a planar environment and the octyl chains parallel to each other. The crystal packing shows stacked units intermolecularly separated by 3.61 Å, probably due to π-π electron interactions between naphtyl groups.

Also the N-dodecyl and N-octadecyl derivatives have been obtained and characterized. These three compounds show antiferromagnetic behavior at room temperature while they are normal around 6K. These facts are interpreted in terms of disorder observed in the structures at room temperature.

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