EPR Study of *Trans*-Tetra(miconazole) Copper(II) Chloride Dihydrate $\{(C_{18}H_{14}Cl_4N_2O)_4 \cdot CuCl_2 \cdot 2H_2O\}$

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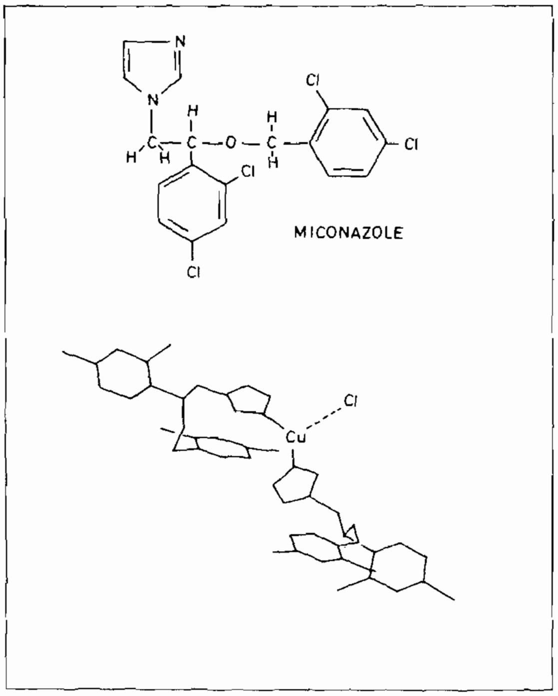
In this note, we present the results of EPR and optical studies on the title compound. The EPR spectra are recorded from pure (non diluted) single crystals. The coalescence to a single line of the hyperfine structure is not observed here, the distance between the Cu^{++} ions being great enough to reduce the exchange phenomenon.

Recent crystallographic study [1] reveals that the copper ion is six-coordinated to four nitrogen and two chloride atoms in a fairly regular octahedron. The number of molecules per unit cell is only one, making this compound specially suitable for an optical study with polarized light. The experimental results ($g_\parallel = 2.27$, $g_\perp = 2.05$, $A_\parallel = 175$ gauss) will be understood within the framework of an AOM model.



References

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Solvent Effects on the Spectroscopic Properties of Bis(8-hydroxyquinolinato)platinum(II)

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Electronic Spectra

The electronic absorption spectrum of bis(8-hydroxyquinolinato)platinum(II), denoted *I*, is strongly dependent on solvent. The low-energy band (A) appears at 22026 cm^{-1} in MeOH and red-shifts in solvents of lower polarity, appearing at 20812 cm^{-1} in the least polar 1,4-dioxan. Similar effects were observed for the high-energy band (B) (λ max 29542 cm^{-1} in MeOH) but in this case the shifts were smaller. A plot of E_T values for the solvents [1] *versus* ν_{max} for bands A and B showed two distinct linear regions, one referring to hydroxylic solvents and one to non-hydroxylic solvents: the distinction between the two regions was especially marked for band B.

The solvent-dependence of bands A and B shows the same direction and, for band A, the same energy as the shifts observed for the metal-to-ligand charge transfer bands in a number of transition metal complexes [1, 2]. This suggests that band A of *I* complex is also due to an MLCT transition.

Luminescence properties

The luminescence spectrum of *I* consists of a band at 15200 cm^{-1}: over the solvent range EtOH to DMSO, the peak shifts by only 230 cm^{-1}, which is in keeping with its assignment to a spin-forbidden d–d transition as is its energy [3]. The luminescence lifetime of *I* is relatively independent of the solvent (Table I), most values falling within a range of a factor of 2.

TABLE I. Luminescence Lifetime of Bis(8-hydroxyquinolinato)platinum(II)

Solvent	*τ(μs) 296 K*	*Isotope Effect*
DMSO	2.9 ± 0.3	$\frac{\tau CD_3OD}{\tau CH_3OH} = 1.16$
MeOH	3.72 ± 0.1	
EtOH	5.0 ± 0.1	
$(CH_3)_2CO$	2.2 ± 0.05	
CD_3OD	4.3 ± 0.1	