

LETTERS
TO THE EDITOR

**Synthesis of Coordination Compounds
of 6-Ethoxycarbonyl-3,5-diphenylcyclohex-2-en-1-one
with Cu(II), Ni(II), and Co(II)**

V. I. Zelenov, A. V. Chernova, and L. I. Lysenko

*Kuban State University,
ul. Stavropol'skaya 149, Krasnodar, 350040 Russia
e-mail: ani-sha@yandex.ru*

Received October 8, 2007

DOI: 10.1134/S107036320901023X

Synthesis of metal β -diketonates is one the most urgent problems of coordination chemistry, which is associated with the wide use of these compounds in industry [1]. We could prepare copper, nickel, and cobalt β -diketonates with novel cyclic β -diketones, synthesized by the authors' procedures: 6-ethoxycarbonyl-3,5-diphenylcyclohex-2-en-1-one (L^I) and 6-acetyl-3,5-diphenylcyclohex-2-en-1-one (L^{II}) [2].

The complexes were synthesized in 96% ethanol. Mixing of 0.01 M solutions of $CuCl_2 \cdot 2H_2O$, $NiSO_4 \cdot 7H_2O$, and $CoCl_2 \cdot 6H_2O$ and 0.01 M solutions of β -diketones (ratio 1:2) gave precipitates having colors characteristic of the corresponding metal ions. The resulting compounds were separated by vacuum filtration, washed with ethanol, and dried to constant weight.

The IR spectra of the products contained bands at 1640–1550 cm^{-1} . The UV spectra of compounds with ligand L^I show bands at 47300 and 34400 cm^{-1} and the spectra of compounds with ligand L^{II} , at 47200, 34800, and 27800 cm^{-1} . The IR and UV data are characteristic of metal β -diketonates.

$Cu(L^I)_2$. Found, %: C 71.91, 71.89; H 5.41, 5.47; Cu 9.01, 9.07. Calculated, %: C 71.85; H 5.42; Cu 9.05.

$Ni(L^I)_2$. Found, %: C 72.33, 72.39; H 5.46, 5.49; Ni 8.45, 8.51. Calculated, %: C 72.34; H 5.45; Ni 8.43.

$Co(L^I)_2$. Found, %: C 72.38, 72.42; H 5.41, 5.44; Co 8.42, 8.45. Calculated, %: C 72.32; H 5.45; Co 8.45.

$Cu(L^{II})_2$. Found, %: C 74.83, 74.90; H 5.39, 5.34; Cu 9.95, 9.89. Calculated, %: C 74.82; H 5.30; Cu 9.90.

$Ni(L^{II})_2$. Found, %: C 75.36, 75.41; H 5.35, 5.37; Ni 9.23, 9.30. Calculated, %: C 75.39; H 5.34; Ni 9.22.

$Co(L^{II})_2$. Found, %: C 75.39, 75.45; H 5.35, 5.39; Co 9.33, 9.30. Calculated, %: C 75.37; H 5.34; Co 9.25.

ACKNOWLEDGMENTS

The work was financially supported by the Russian Foundation for Basic Research (project no. 06-03-96603).

REFERENCES

1. Kaul', A.R., *Zh. Vses. Khim. O–va*, 1989, vol. 34, no. 4, p. 492.
2. Lysenko, L.I., *Cand. Sci. (Chem.) Dissertation*, Krasnodar, 2005.