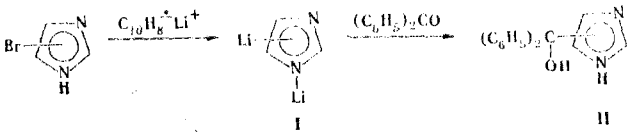
NEW ORGANOLITHIUM COMPOUND OF IMIDAZOLE

B. A. Tertov, Yu. V. Koshchienko, and V. V. Bessonov

UDC 547.78:542.957

Since N-substituted 5-lithioimidazoles readily undergo isomerization to 2-lithioimidazoles, they could not be obtained in satisfactory yields [1,2].

We have established that the quite stable 1,4(5)-dilithioimidazole (I) is formed in the reaction of 4(5)bromoimidazole with naphthyllithium in tetrahydrofuran (THF). The structure of I was ascertained by conversion to diphenyl[4(5)-imidazolyl]carbinol (II).



I II

A solution of 1.1 g (7.5 mmole) of 4(5)-bromoimidazole in 5 ml of THF was added in the course of 5 min at −10 to −15°C to naphthyllithium obtained from 0.31 g (45 mmole) of lithium and 4.48 g (35 mmole) of naphthalene in 30 ml of THF. After 5 min, a solution of 6.38 g (35 mmole) of benzophenone in 15 ml of THF was added to the mixture, and the temperature was raised to 20-25°C in the course of 30 min and maintained at that level for 1 h. Carbinol II was then isolated by the usual method. The yield was 1.13 g (60%). The colorless crystals had mp 168-169°C (the alternative compound, viz., diphenyl(2-imidazolyl)-carbinol, has mp 187-188°C [3]). IR spectrum (in mineral oil): 705, 758 (C_6H_5), 2100-3400 (associated NH), 3235 cm^{-1} (OH). PMR spectrum (CF_3COOH), δ: 6.5-7.4 [11H, m, 4(5)-H, C_6H_5], and 8.38 ppm (1H, s, 2-H). The results of elementary analysis of II were in agreement with the calculated values.

LITERATURE CITED

1. D. A. Shirley and P. W. Alley, J. Am. Chem. Soc., 79, 4922 (1957).
2. B. A. Tertov and A. S. Morkovnik, Khim. Geterotsikl. Soedin., No. 3, 392 (1975).
3. C. Stelt, P. S. Hofman, and A. B. H. Funcke, Eur. J. Med. Chem., 13, 251 (1978).

Rostov State University. Scientific-Research Institute of Physical and Organic Chemistry, Rostov-on-Don 344006. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 9, p. 1279, September, 1982. Original article submitted February 26, 1982.

0009-3122/82/1809-0995$07.50