

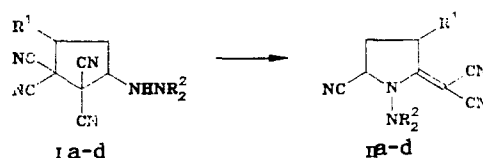
LETTERS TO THE EDITOR

UNUSUAL CONVERSION OF 3-(N',N'-DIALKYLHYDRAZINO)-1,1,2,2-TETRACYANOCYCLOPENTANES TO 1-DIALKYLAMINO-2-DICYANOMETHYLENE-5-CYANOPYRROLIDINES

O. A. Nasakin, P. M. Lukin, V. P. Sheverdov,
S. N. Krasnokutskii, S. V. Medvedev,
P. A. Sharbatyan, and V. A. Tafeenko

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We have established that 1-dialkylamino-2-dicyanomethylene-5-cyanopyrrolidines IIa-d are formed when 3-(N',N'-dialkylhydrazino)-1,1,2,2-tetracyanocyclopentanes Ia-d [1] are refluxed in aqueous isopropyl alcohol with a twofold molar excess of triethylamine for 2-5 min with subsequent dilution with water.



I, II a $R^1=R^2=CH_3$; b $R^1=C_3H_7$, $R^2=CH_3$; c $R^1=C_6H_5$, $R^2=CH_3$; d $R^1=CH_3$, $R^2=C_2H_5$

Compound IIa. This compound had mp 169-170°C. IR spectrum, ν (in mineral oil): 2228, 2220 (C=C); 1584 cm^{-1} (C=C). The yield was 44%.

Compound IIb. This compound had mp 118-119°C. IR spectrum, ν (in mineral oil): 2229, 2221 (C=C); 1600 cm^{-1} (C=C). The yield was 40%.

Compound IIc. This compound had mp 165°C. IR spectrum, ν (in mineral oil): 2230, 2220 (C=N); 1585 cm^{-1} (C=C). The yield was 30%.

Compound IId. This compound had mp 129-130°C. IR spectrum, ν (in mineral oil): 2227, 2216 (C=N); 1581 cm^{-1} (C=C). The yield was 39%.

The structure of IIa was established by x-ray diffraction analysis. Single crystals of IIa were investigated with an SAD-4 diffractometer using Mo K α emission, a graphite monochromator, and ω scanning. The principal crystallographic data were as follows: $a = 10.553(2)$, $b = 6.980(2)$, $c = 15.884(3)$ Å, $\beta = 100.38(2)$; $V = 1150.9$ Å³, space group P²₁/C, $Z = 4$, R factor 4.3%. The structures of IIb-d were established by comparing the IR and ¹H and ¹³C NMR spectra of IIa with the spectra of IIb-d.

LITERATURE CITED

1. A. B. Zolotoi, O. A. D'yachenko, S. V. Konovalikhin, L. O. Atovmyan, O. E. Nasakin, P. M. Lukin, S. P. Zil'berg, A. N. Lyshchikov, M. Yu. Skvortsova, and A. Kh. Bulai, *Izv. Akad. Nauk SSSR, Ser. Khim.*, No. 8, 1818 (1987).