# SYNTHESIS OF 1-DIALKYLAMINO-5,5,6,6-TETRACYANO-2-PIPERIDONES FROM 3-(N',N'-DIALKYLHYDRAZINO)-1,1,2,2-TETRACYANOCYCLOPENTANES

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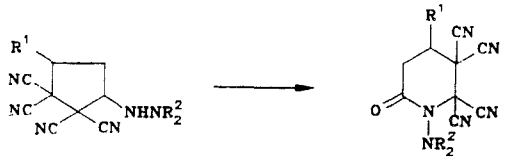
We have found that oxidation of 3-(N',N'-dimethylhydrazino)-1,1,2,2-tetracyanocyclopentanes [1] with potassium permanganate in aqueous sulfuric acid media for 20-30 min at room temperature results in the formation of 3-(N',N'-dimethylhydrazono)-1,1,2,2-tetracyanocyclopentanes; in contrast, oxidation with potassium permanganate under analogous conditions but in hydrochloric acid media leads to the formation of 1-dialkylamino-5,5,6,6-tetracyano-2-piperidones:



Ia-c IIa-c

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

**Compound IIa.** mp 164°C, yield 40%. IR spectrum, $\nu$ (Vaseline mull): 2260 (C–N), 1720 $cm^{-1}$ (C=O).

**Compound IIb.** mp 157°C, yield 57%. IR spectrum, $\nu$ (Vaseline mull): 2260 (C–N), 1712 $cm^{-1}$ (C=O).

**Compound IIc.** mp 137-138°C, yield 39%. IR spectrum, $\nu$ (Vaseline mull): 2255 (C–N), 1716 $cm^{-1}$ (C=O).

The structure of compound IIa was established based on the results of x-ray structural analysis: SAD-4 diffractomer, Mo Kα irradiation, graphite monochromator, ω-scanning. Unit-cell parameters: $a = 6.454(2)$, $b = 12.894(2)$, $c = 15.749(3)$ Å. $V = 1310$ Å$^3$, $P2_12_12_1$ space group, $Z = 4$, $R_f = 3.3\%$. The structures of IIb, c were solved by comparing the IR and $^1$H- and $^{13}$C-NMR spectra of compound IIa with those of compounds IIb, c.

## LITERATURE CITED

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