CLEAVAGE OF 5-AROYL-1-METHYL-4-NITROPYRAZOLES BY HYDRAZINE HYDRATE

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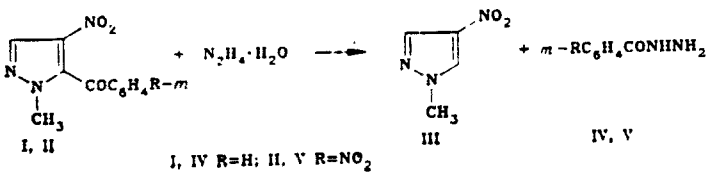
Benzophenone and its substituted derivatives are cleaved by potassium tert-butylate to hydrocarbon and carboxylic acid [1]; sodium amide cleaves benzophenone to benzamide and benzene [2].

We have found that 5-aroyl-1-methyl-4-nitropyrazoles (I) and (II) are cleaved by hydrazine hydrate in alcohol solution at 30-40°C to form 4-nitropyrazole (III) and hydrazides (IV) and (V).



5-Aroylpyrazoles that do not contain a nitro group at position 4 of the pyrazole segment are not cleaved by hydrazine hydrate.

To a solution of 1.38 g (5 mmoles) of 1-methyl-4-nitro-5-(3-nitrobenzoyl)pyrazole (II) in 20 ml of ethanol was added 2 ml of hydrazine hydrate. The mixture was held for 0.5 h at 40°C, then cooled. The precipitate of 3-nitrobenzoic hydrazide (V) was filtered off; yield 0.7 g (78%). The solvent was distilled from the filtrate and the residue was recrystallized from 2-propanol. There was obtained 0.5 g (83%) of compound (III). The structures of these compounds were confirmed by mass spectral data and by the agreement of their melting points with published data.

LITERATURE CITED

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2. A. Schonberg, *Ann.*, **436**, 205 (1924).

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