# UNUSUAL REACTION OF ACRIDINIUM METHIODIDE FORMATION OF TRIIODIDES ON REACTION WITH DIALKYLANILINES

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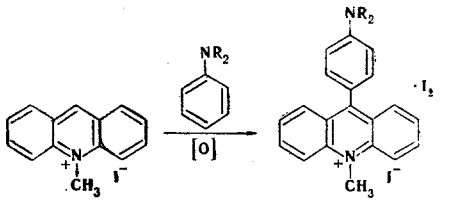
We have found that dialkylanilines containing amino groups with bulky substituents undergo reaction with acridinium methiodide (I) in dimethyl sulfoxide at room temperature in 80 h or in dimethylformamide at 120° with bubbling in air or in the course of 3 h to give deeply colored crystalline II, containing three iodine atoms, instead of the expected 9-[p-(N,N-dialkylamino)phenyl]acridinium iodides [1].




I II

In contrast to the usual products of nucleophilic substitution of hydrogen in iodide I by aniline and dimethyl- and diethylanilines and their derivatives [1], triiodides II are soluble in benzene and chloroform. The electronic spectra of alcohol solutions of triiodides II contain a maximum at 286-289 nm (alcohol solutions of iodine and the $I_3^-$ ion absorb at $\lambda_{max}$ 294 nm [2]) in addition to the absorption bands at 260 and 360 nm typical for acridinium salts. The PMR spectra correspond to structure II. The percentage of $I^-$ ions determined by potentiometric titration with $AgNO_3$ solution was close to the calculated value (14.8%) for IId (14.2%). The results of analysis for C, H, and N (and the determination of the total iodine for IIb and IIc) are in good agreement with the calculated values.

TABLE 1. Iodine Complexes with Acridinium Salts

| Compound | R | mp, °C | Electronic spectrum, $\lambda_{max}$, nm (log ε) | Yield with respect to iodine, % |
|---|---|---|---|---|
| IIa | $C_3H_7$ | 183—185 | 260 (5,02), 289 (4,73), 360 (4,61), 592 (4,11) | 35 |
| IIb | $C_4H_9$ | 155—156 | 260 (5,01), 288 (4,72), 360 (4,59), 594 (4,13) | 52 |
| IIc | $C_5H_{11}$ | 156—157 | 259 (4,92), 288 (4,60), 360 (4,67), 593 (4,18) | 37 |
| IId | $CH_2C_6H_5$ | 137—139 | 260 (5,05), 286 (4,69), 360 (4,62), 560 (4,16) | 90 |

## LITERATURE CITED

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2. Abdul Aziz Ramadan, P. K. Agasyan, and S. I. Petrov, Zh. Analiticheskoi Khim., 28, 2396 (1973).

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