

# SYNTHESIS OF 1-AZAACENAPHTHYLENES

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1-Azaacenaphthylene derivatives are formed as a result of intramolecular dehydration of acylamino- and diacylaminonaphthalenes.

It is known that 2-(acylamino)diphenyls under certain conditions undergo cyclodehydration to form phenanthridine derivatives [1]. We used this reaction with acylaminonaphthalenes to prepare a series of new compounds that are models of the elementary link of a polymer molecule.

Azaacenaphthylenes were obtained as a result of intramolecular dehydration of 1-acylamino- and 1,4-di(acylamino)naphthalenes in the presence of phosphorus oxychloride. The disappearance of the characteristic absorption bands of the carbonyl ( $1650\text{ cm}^{-1}$ ) and secondary amide ( $1530\text{--}1535\text{ cm}^{-1}$ ) groups in the spectrum of the cyclization product and the appearance of a new band characteristic for the azamethine group ( $1610\text{ cm}^{-1}$ ) confirm the formation of 1-azaacenaphthylenes (Table 1).

## EXPERIMENTAL

All of the acylamino- and diacylaminonaphthalenes were obtained via the Schotten-Baumann reaction from aminonaphthalenes and the chlorides of the appropriate acids.

The cyclodehydration was carried out in the presence of phosphorus oxychloride in refluxing nitrobenzene for 12 h. The reaction mixture was cooled and poured into cold water containing ice. The nitrobenzene was removed by steam distillation, and the residue was removed by filtration. The acylaminonaphthalenes were extracted with acetone, and the diacylaminonaphthalenes were extracted with chlorobenzene; the azaacenaphthylene derivatives, the properties of which are described in Table 1, were then isolated. The results of molecular weight determinations by a cryoscopic method were in agreement with the empirical formulas.

## LITERATURE CITED

1. L. Walls, in: Heterocyclic Compounds [Russian translation], Vol. 4, Inostr. Lit., Moscow (1955), p. 435.

TABLE 1. Properties of the Synthesized Compounds

Name	mp, °C	Empirical formula	Found, %			Calc., %		
			C	H	N	C	H	N
2-Phenyl-1-azaacenaphthylene	296	C <sub>17</sub> H <sub>11</sub> N	88,8	5,0	6,1	89,1	4,8	6,1
2-Methyl-1-azaacenaphthylene	290	C <sub>12</sub> H <sub>9</sub> N	86,1	5,0	8,2	86,3	5,4	8,4
2-Ethyl-1-azaacenaphthylene	260	C <sub>13</sub> H <sub>11</sub> N	86,0	6,0	7,6	86,2	6,1	7,7
2,5-Diphenyl-1,6-diazacyclo-pent[f,g]acenaphthalene	345	C <sub>22</sub> H <sub>14</sub> N <sub>2</sub>	87,2	4,1	8,2	87,3	4,2	8,5

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