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A NEW BENZAZOLE SYNTHESIS

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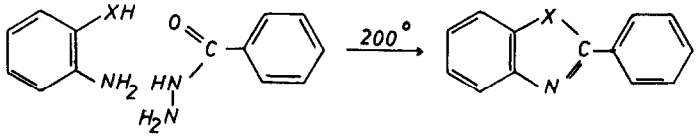
In another communication[1] we described recently a new method for the preparation of benzazoles (benzthiazoles, benzoxazoles, benzimidazoles). On heating o-aminothiophenol, o-aminophenol or o-phenylene diamine with an equivalent amount of isonicotinic hydrazide, the initial substances were converted into 2-(4'-pyridyl)-benzazoles in fair yields.

In the present letter, we report on the preparation of 2-phenyl benzazoles with the aid of this method.



where X = S, O or NH

TABLE 1.

2-Phenyl Benzazoles

X	Found[a] m.p. °C	Ref. m.p. °C	Yield %	Formula (Mol.wt.)	Analysis % Calcd. C	H	N	Found C	H	N	λ EtOH[b] max.mμ(log ε) 1x10^{-4} mole
S	111-112	(2) 114	64	$C_{13}H_9NS$ (211.29)	73.90	4.29	6.63	73.72	4.59	6.50	248 (2.90), 290 (3.18), 296 (3.19)
O	102-103	(3) 102	59	$C_{13}H_9NO$ (195.22)	79.99	4.64	7.17	80.06	4.68	7.23	298 (3.16)
NH	288-292	(4) 290	76	$C_{13}H_{10}N_2$ (194.24)	80.39	5.19	14.42	80.30	5.10	14.67	242 (3.07), 297 (3.15), 301 (3.16)

a) All melting points were established in a Boetius melting apparatus

b) Ultraviolet spectra were recorded with a Beckman G-2400 model

Equivalent amounts of the components were heated 5 hours on metal bath (200°) without any solvent. The completion of the reaction was indicated by the end of formation of condensation products (water, hydrazine). The obtained products were purified by recrystallization from aqueous ethanol. No side reactions were observed.

The yields, melting points and ultraviolet absorption maxima of the three phenyl benzazole compounds are presented in Table 1.

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