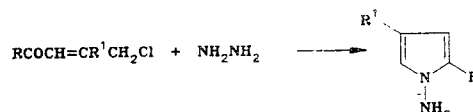


HETEROCYCLIZATION OF 1-ALKYL-4-CHLOROBUT-2-EN-1-ONES WITH HYDRAZINE HYDRATE

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The reaction of methyl γ -chloropropyl ketone with hydrazine leads to 3-methyl-1,4,5,6-tetrahydropyridazine [1]. At the same time, alkyl(aryl, cycloalkyl) β,γ -dichloropropyl ketones react with ammonia or primary amines to form substituted pyrroles [2].



We found that in the reaction of 1-alkyl-4-chlorobuten-2-ones 1 with excess hydrazine hydrate in ethanol, 1-amino-2-alkylpyrroles are formed (Table 1).

The structure of the synthesized pyrrole derivatives was confirmed by IR and PMR spectroscopy, as well as by chemical transformations.

1-Amino-2-methylpyrrole. PMR spectrum (CCl_4): 1.93 (3H, s CH_3), 4.95 (2H, s, NH_2); 5.50, 5.65, and 6.30 ppm (in each case 1H, m, 3-, 4-, and 5-H).

TABLE 1. 1-Aminopyrroles

R	R ¹	T _{bp} , °C (mm Hg)	n_D^{20}	d_4^{20}	Yield, %
CH_3	H	63...64 (1)	1.5214	1.0366	56
CH_3	CH_3	100...101 (6)	1.5175	1.0176	50
C_2H_5	H	83...84 (3)	1.5187	1.0092	48
C_3H_7	H	90...91 (1)	1.5149	0.9973	47
C_3H_7	CH_3	104...105 (2)	1.5097	0.9886	42
C_4H_9	H	97...98 (2)	1.5094	0.9798	40

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