N-ALKYL- AND N-PHENYLTHIOMETHYLAZIRIDINES

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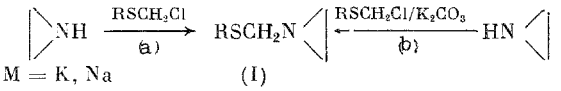
N-Alkyl and N-phenylthiomethylaziridines (I) have been shown not to be obtained by the reaction with formaldehyde and thiols, which is ordinary for secondary amines, since the thiols cleave the aziridine ring.

The synthesis of (I) has been carried out for the first time by analogy to N-alkoxymethylaziridines by the reactions of chloromethyl sulfides with a) K/Na ethylenamides in hexane at −40°C [1] and b) ethylenimine in the presence of K_2CO_3 in ether or acetonitrile at about 20°C [2] (see Table 1).



The structures of the products were confirmed by mass spectrometry. For example, for R = Me, m/z (relative intensity, %): M^+ 103 (5), 61 (8), 56 (100), 42 (16). O. A. Pan'shin participated in the synthesis by procedure a).

TABLE 1. Characteristics of (I)

R	Yield (%)	Bp, °C (mm Hg)	n_D^{20}	d_4^{20}	PMR, δ, ppm, J, Hz			N, Found/ Calculated, %
					ring-CH_2	CH_2N	R	
Me	42(a) 50(b)	40 (3)	1.4720	0.9510	1.18 m 1,25 m	3.27 s	2,10 s	13,70 13,58
Et	51(a) 60(b)	50 (10)	1.4870	0.9632	1.30 m 1.70 m	3.40 s	1,21 t 2,66 q (^3J=7,5)	12,24 11,95
t-Bu	50(a) 70(b)	70 (10)	1,5090	0,9983	1.40 m 1,65 m	3,45 s	1,40 s	9,59 9,64
$PhCH_2$	51(a) 70(b)	95 (1,0)	1.5690	1,0720	0,95 m 1,45 m	3,80 s	3,10 s	8,19 7,81
Ph	40(a) 66(b)	80 (0,5)	1.5862	1,1080	1.18 m 1,55 m	3,82 s	7,30 m 7,25 m	8,81 8,48

LITERATURE CITED

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*As in Russian original; vol. no. corresponds to Zh. Obshch. Khim. — Editor.

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