

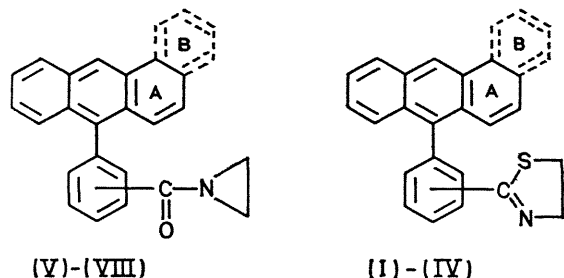
2-(3- and 4-Benz[*a*]anthracen-7-ylphenyl)- Δ^2 -thiazolines and 2-(3- and 4-Anthracen-9-ylphenyl)- Δ^2 -thiazolines. A New Preparation of Thiazolines†

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Summary Δ^2 -Thiazolines have been prepared in one step by refluxing *N*-aroylaziridines with excess of phosphorus pentasulphide in toluene for short times.

Δ^2 -THIAZOLINES have usually been prepared from *N*-(2-mercaptoethyl)amides with phosphorus pentoxide or from *N*-(2-chloroethyl)amides with phosphorus pentasulphide.¹

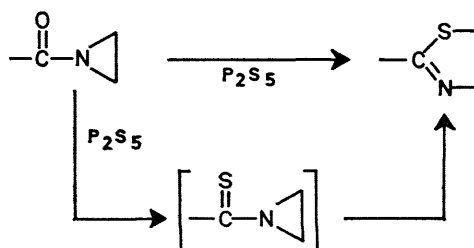


For (I), (II), (IV), and (VI), rings A and B present, for (III), (IV), (VII), and (VIII), ring A only. Substitution in the phenyl ring is *meta* in (I), (III), (IV), and (VIII), *para* in (II), (IV), and (XI).

We now report a new, one-step method for the preparation of Δ^2 -thiazolines in high yield by treatment of *N*-aroylaziridines with phosphorus pentasulphide. 2-(3- and 4-

Benz[*a*]anthracen-7-yl)phenyl- (I) and (II), and 2-(3- and 4-anthracen-9-yl)phenyl- Δ^2 -thiazolines (III) and (IV) were prepared in 70–77% yield by refluxing the *N*-benzoylaziridines² (V)–(VIII) with excess of phosphorus pentasulphide in toluene for 3 h.

The reactions occurred rapidly; the Δ^2 -thiazolines were formed either by a one-step concerted mechanism or by the formation of aziridine-1-thiones which rapidly isomerized to the Δ^2 -thiazolines under the reaction conditions. No evidence for the presence of the aziridine-1-thiones was obtained with reaction times of 0.5 to 2 h.



The four Δ^2 -thiazolines were characterized by elemental analysis‡ and by their n.m.r. spectra.

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† Abstracted from the Ph.D. Thesis of M. P. Rorer, Nov. 1969.

‡ Satisfactory analytical data were obtained.

¹ J. M. Sprague and A. H. Land, "Heterocyclic Chemistry", vol. 5, ed. by R. C. Elderfield, Wiley, New York, 1957, p. 679.

² F. A. Vingiello, M. P. Rorer, and M. A. Oglaruso, *Org. Prep. Proced. Int.*, 1971, 3, 9.