

AN APPROACH TO BISKETENS

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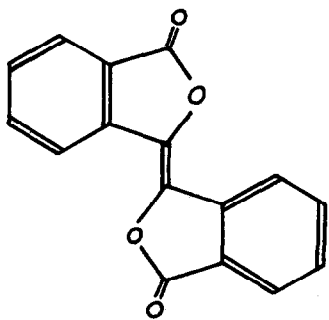
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The photolysis of benzocyclobutenedione yields three products (I), (II) and (III) by way of the diketene (IV) and the derived carbene (V). Recent reports² concerning the generation of diketene mono- and di-imines as intermediates in the reaction of isonitriles with cyclopropanones and acetylenes, prompt us to report our attempts to generate diketenes by the dehydrochlorination of succinyl chlorides.

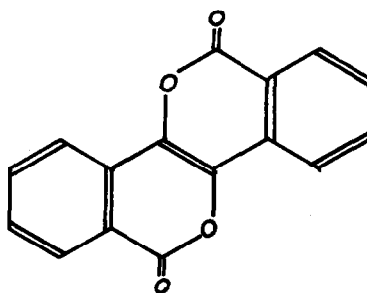
Treatment of phenyl, α,α' -diphenyl and α,α' -dichloro-succinyl chlorides with triethylamine in benzene yielded the corresponding bifurandiones (VI a-c), in yields of 0.5, 22 and 18% respectively, as the only characterisable products. The bifurandione (VIb) has apparently been obtained previously from this reaction³ but was not identified. α,α' -Dimethylsuccinyl chloride gave approximately equal amounts (3%) of tetramethylbifurandione (VIc) and the pyronopyrone (VIIa). No well-defined products have been obtained from succinyl or methylsuccinyl chlorides. In accord with a previous report⁴ hexahydrophthaloyl chloride yielded primarily the pyronopyrone (VIIb), although minor amounts of the bifurandione (VIc) were also formed. With 1,2-dihydrophthaloyl chloride the main product isolated after workup was benzoic acid (32%) presumably resulting from elimination of H-COCl which would be facilitated by the attendant aromatisation. As a result of this unusual elimination only small amounts (3%) of biphthalylidene (I) were isolated, and neither (II) nor (III) were observed. The apparent absence of these compounds may not be significant as the relative amounts of (I), (II) and (III) produced in the photolysis reaction varies with the reaction conditions.

We are currently seeking further information concerning the supposed diketene intermediates.

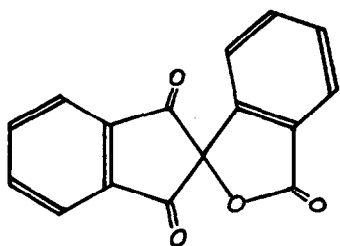
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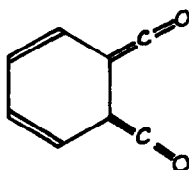
I



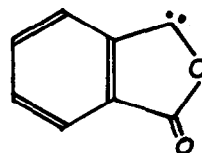
II



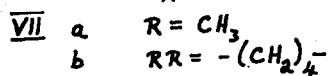
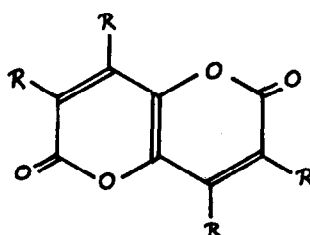
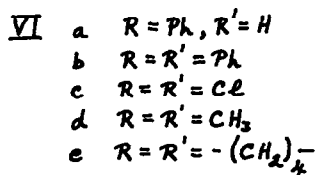
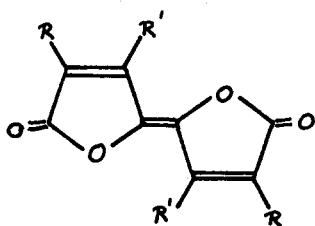
III



IV



V



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