SOME REACTIONS OF 1,2-DIPHENYL-1-AZASPIRO[2.2]PENTANE

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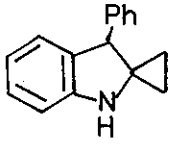
The acidic alumina-induced reaction of 1,2-diphenyl-1-azaspiro[2.2]pentane (1) afforded 3-phenylindoline-2-spirocyclopropane (3) and 1-anilino-1-hydroxybenzylcyclopropane (4). Under the influence of $BF_3 \cdot OEt_2$ 1 gave 3 and a dimer of 1, piperidine-bispirocyclopropane derivative 7.

Azaspiropentane 1 reacted with C,N-diphenylnitrone to give the 1:1 adduct 9a, benzo[f]-1,3-diazepinone compound 10a, and/or its isomer, (o-benzylideneaminophenyl)phenylacetoanilide (11a), whose relative yields depended upon the nature of solvents. When heated in methanol, 10a readily isomerized to 11a. The product 10a can be interpreted as arising via reaction of the nitrone with C,N-diphenylketenimine which is generated from 1 with the elimination of ethylene. In this context, the reaction of ketenimines with nitrones has been investigated. Diphenylketene-N-phenylimine reacted with acyclic and cyclic nitrones to yield the products derived from a new 1,3-dipole D. The reaction of dimethylketene-N-phenylimine with C,N-diphenylnitrone proceeded through the same pathway as that of C,N-diphenylketenimine, whereas the products derived from 1,3-dipole of type D were formed in the reaction with cyclic nitrones.

1



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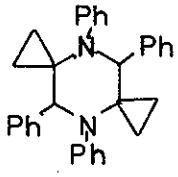

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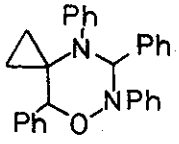
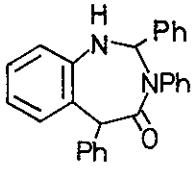
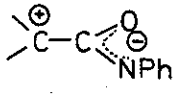


9a



10a



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