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Reaction of benzylidenephenylsulfonylacetophenone with trimethyl phosphite and tris(dimethylamino) phosphine

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Abstract

1. Benzylidenephenylsulfonylacetophenone (I) reacts with trimethyl phosphite (80°, C6H6) to give 2,2,2-trimethoxy-3,5-diphenyl-4-phenylsulfonyl-1,2-oxa-4-phospholene (II). 2. Two processes take place simultaneously at high temperatures (160°): isomerization of phosphorane (II) to give the dimethyl ester of 1,3-diphenyl-2-phenylsulfonyl-3-methoxy-2-propenephosphonic acid (VI), and decomposition of phosphorane (II) to the starting reactants with a cleavage of the P-C bond. 3. When phosphorane (II) is reacted with proton-donor reagents the phosphorane ring is opened at the P-O bond to give the dimethyl ester of 1-phenyl-2-benzo-l-2-phenylsulfonylethanephosphonic acid (III). 4. Benzylidenephenylsulfonylacetophenone (I) reacts with tris(dimethylamino)phosphine to give the 1:1 adduct with a bipolar structure (VII) and containing the P-C bond. Its hydrolysis and reaction with dry HCl gas were studied. © 1973 Consultants Bureau.

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