The Formation of Benzyne by Deoxygenation of 1-Nitrosobenzotriazole by Ethyl Diphenylphosphinite

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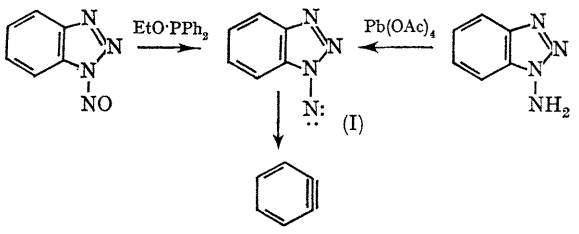
Summary Benzyne is formed on deoxygenation of 1-nitrosobenzotriazole by ethyl diphenylphosphinite.

OXIDATION of 1-aminobenzotriazole is a convenient route to benzyne, possibly *via* a nitrene (I).[1] In view of the ease with which certain nitroso-compounds are deoxygenated by triethyl phosphite,[2] also probably *via* nitrenes, it was of interest to attempt the reduction of 1-nitrosobenzotriazole to the nitrene (I) and hence to benzyne.

It has now been shown that 1-nitrosobenzotriazole, prepared as an unstable yellow solid, m.p. 40—42°, by addition of nitrosyl chloride (2 g.) in ether to benzotriazole (2 g.) and pyridine (2 ml.), also in ether (40 ml.), followed by evaporation of the filtrate, reacts vigorously at room temperature with ethyl diphenylphosphinite in benzene with the evolution of nitrogen. Reaction in the presence of 2,3,4,5-tetraphenylcyclopentadienone gives the corresponding "benzene adduct," 1,2,3,4-tetraphenylnaphthalene, in 25% yield. This reduction of *N*-nitroso-compounds, which we believe is the first of its type recorded, suggests many reactions of synthetic usefulness.



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