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P-H Insertion of Carbenes and Carbenoids. Method of Synthesis of 2-Phosphono-1,3-dicarbonyl Compounds

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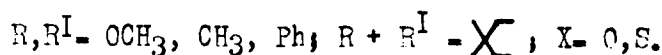
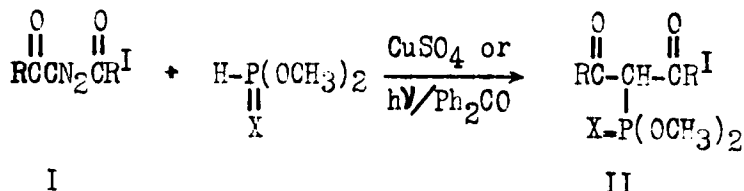
P-H Insertion of Carbenes and Carbenoids. Method of Synthesis of 2-Phosphono-1,3-dicarbonyl Compounds

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Unlike of the Cu(II) catalysed thermal decomposition of 2-diazo-1,3-dicarbonyl compounds(I) in dialkyl phosphites that results in the formation of 2-phosphono-1,3-dicarbonyl compounds (II,X=O)^I, the photosensitized process affords also thiophosphono analogs of the latter (II,X=S) while carried out in dialkyl thiophosphites. Since there are no P-H insertion products(II) formed on the direct photolysis of I it seems reasonable to suggest that it is the triplet carbene as intermediate that is needed for their formation. Yields of II, which proved to be rather photosensitive, are found to depend substantially on the reaction time. The tendency of II to enolization decreases with replacement of P=O for P-S group.



I. Arbuzov B.A., Polozov A.M., Polezhaeva N.A. - Zh. Obshch. Khim., 1984, v54, p 1517.