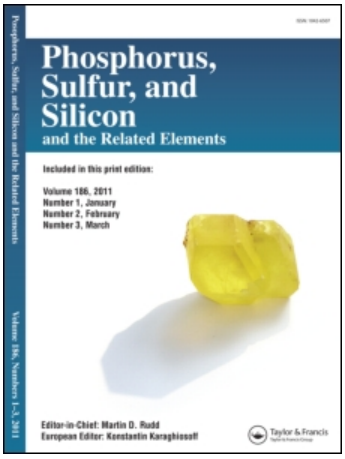

Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Mechanistic Studies of the Photolysis of Phosphonium Salts

Elena O. Alonso[a]; Maria E. R. Marcondes[a]; Vicente G. Toscano[a]
[a] Institute de Quimica, Universidade de Sao Paulo, Sao Paulo, SP, Brasil

To cite this Article Alonso, Elena O. , Marcondes, Maria E. R. and Toscano, Vicente G.(1987) 'Mechanistic Studies of the Photolysis of Phosphonium Salts', Phosphorus, Sulfur, and Silicon and the Related Elements, 30: 3, 737
To link to this Article: DOI: 10.1080/03086648708079231
URL: http://dx.doi.org/10.1080/03086648708079231

Mechanistic Studies of the Photolysis of Phosphonium Salts

Elena O. Alonso, Maria E.R. Marcondes and Vicente G. Toscano*
Instituto de Química, Universidade de São Paulo
Caixa Postal 20780, 01498 São Paulo, SP, Brasil

As part of our continuing interest in the mechanistic photochemistry of phosphonium salts (Toscano et al., Chem. Commun., 567 (1973); J. Phys. Chem., 83(9), 1213 (1979))we have investigated the photodecomposition (313 nm irradiation) of (1-naphthylmethyl)triphenylphosphonium (I) chloride and tetrafluoroborate in deaerated isopropanol:

$$\underset{\text{IpOH}}{\underline{I}} \xrightarrow[313\text{nm}]{h\nu} \underset{\underline{II}}{P\phi_3} + \underset{\underline{III}}{NpCH_2CH_2Np} + \underset{\underline{IV}}{NpCH_2OCH(CH_3)_2} + \underset{\underline{V}}{NpCH_2C(CH_3)_2OH}$$

The observed photoproducts ($\Phi_{II} = \Phi_{IV} + \Phi_V + 2\Phi_{III} = 0.08$), which presumably arise from the excited singlet state (I is non-fluorescent), are consistent with either competitive homolytic cleavage or initial homolytic cleavage and subsequent rapid electron transfer, with little or no direct participation of the counterion in the primary photoprocess(es).

Comparative studies of the photolysis of the homologous salts $|Np(CH_2)_n P\phi_3^+ X^-|$ are currently in progress.