

This article was downloaded by:

On: 30 January 2011

Access details: Access Details: Free Access

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



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>

OXIDATION OF THE ALKYL-, ARYL-, AND AMINO-SULFONIUM IONS TO THE SULFOXONIUM IONS AND ITS REACTION MECHANISM

Michio Kobayashi^a; Kentaro Okuma^a; Hiroyuki Takeuchi^a

^a Department of Chemistry, Faculty of Science, Tokyo Metropolitan University, Tokyo, Japan

To cite this Article Kobayashi, Michio , Okuma, Kentaro and Takeuchi, Hiroyuki(1979) 'OXIDATION OF THE ALKYL-, ARYL-, AND AMINO-SULFONIUM IONS TO THE SULFOXONIUM IONS AND ITS REACTION MECHANISM', Phosphorus, Sulfur, and Silicon and the Related Elements, 6: 1, 163

To link to this Article: DOI: 10.1080/03086647908080355

URL: <http://dx.doi.org/10.1080/03086647908080355>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Oxidation of the Alkyl-, Aryl-, and Amino-sulfonium Ions to the Sulfoxonium Ions and Its Reaction Mechanism

Michio Kobayashi, Kentaro Okuma and Hiroyuki Takeuchi

Department of Chemistry, Faculty of Science, Tokyo Metropolitan University, Setagaya, Tokyo, Japan

Hitherto, the preparative method of the sulfoxonium ions has been practically limited to the alkylation of the sulfoxides with methyl iodide. The yields of the desired sulfoxonium salts by this method are usually poor except that of trimethylsulfoxonium iodide. Diarylalkyl- or triaryl-sulfoxonium ions can not be prepared by this alkylation.

We wish to report the new general method for the syntheses of these sulfoxonium ions and also of the triaminosulfoxonium ion, a new class of the sulfur compounds, by the oxidation of the appropriate sulfonium salts with the peracids under the basic conditions. The yields usually amount to 50-80%.

Oxidation of (S)(+)-ethylmethylphenylsulfonium perchlorate with perbenzoate in H_2O -MeOH gave the (R)(+)-ethylmethylphenylsulfoxonium ion with the retention of the configuration.

The bicyclic sulfonium salt containing the sulfur atom at the bridgehead position could be oxidized by m-chloroperbenzoate to the corresponding sulfoxonium ion.

These findings indicate that the peracid oxidation of the sulfonium salt proceeds by the front-side attack, probably through the sulfurane intermediate.

