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## Phosphorus, Sulfur, and Silicon and the Related Elements

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### The First Example of Optically Active Chlorophosphine: T-Butylphenylphosphinochlorioite

J. Omelańczuk<sup>a</sup>

<sup>a</sup> Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Łódź, Sienkiewicza, Poland

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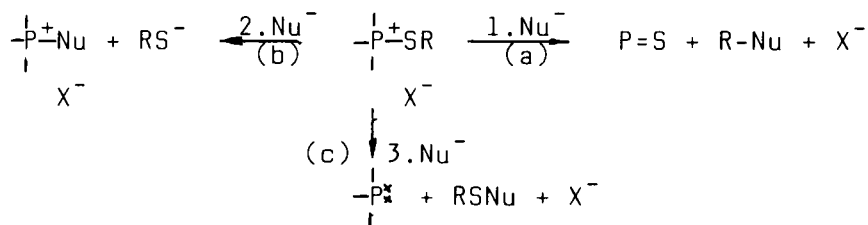
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## THE FIRST EXAMPLE OF OPTICALLY ACTIVE CHLOROPHOSPHINE: t-BUTYLPHENYLPHOSPHINOCHLORIDITE

J. OMELAŃCZUK

Centre of Molecular and Macromolecular Studies, Polish  
 Academy of Sciences, 90-362 Łódź, Sienkiewicza 112,  
 Poland

In general, alkylthiophosphonium salts can react with nucleophiles both in the sense of the Arbuzov rearrangement (a) and the exchange of alkylthio groups at the P atom (b). We have recently demonstrated<sup>1</sup> that in the case of highly "thiophilic" nucleophiles such as mercaptide anions or tris(N,N-dimethylamine)phosphine the reactive centre is the sulphur atom (c).



The latter reaction (c) has been applied for the highly stereoselective synthesis of optically active phosphines, phosphinous and thiophosphinous acid esters. In continuation of this work we examined the reaction of optically active methylthiochlorophosphonium salts with triphenylphosphine and tris(N,N-dimethylamine)phosphine affording optically active phosphinochloridite. The regioselectivity of this reaction and the stereochemistry of the other haloalkylthiophosphonium salts will be discussed in details.

1. J. Omelańczuk, M. Mikołajczyk, J. Am. Chem. Soc., 101, 7292 (1979); J. Omelańczuk, M. Mikołajczyk, Tetrahedron Lett., 25, 2493 (1984).