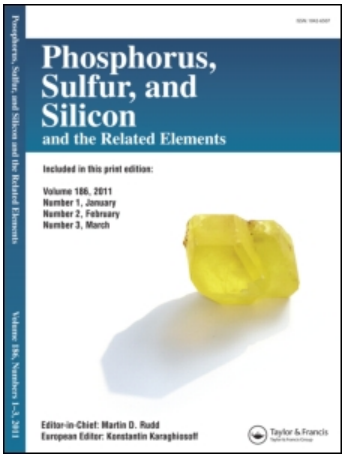

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Synthesis of 2-Mercapto- and 2-Hydroxy-Substituted Diphenylphosphines for use as Dianionic Bidentate Ligands and Polydentate Ligand Precursors

Jonathan R. Dilworth[a]; D. Vaughan Grifiths[a]; Jonathan M. Hughes[a]
[a] Department of Chemistry and Biological Chemistry, University of Essex, Colchester, U.K.

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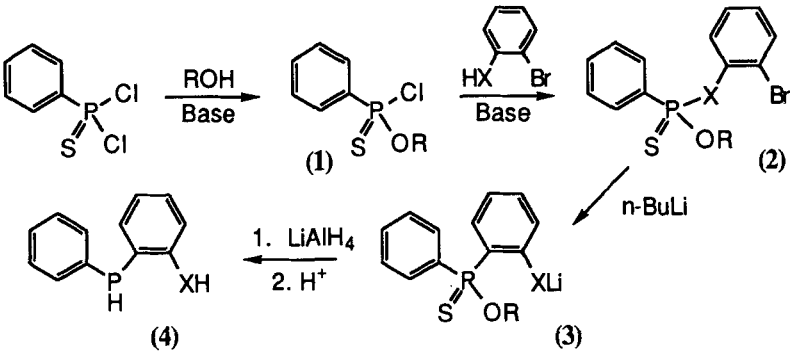
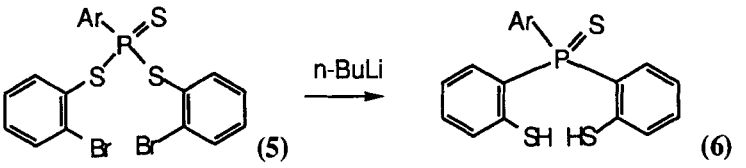
SYNTHESIS OF 2-MERCAPTO- AND 2-HYDROXY-SUBSTITUTED DIPHENYLPHOSPHINES FOR USE AS DIANIONIC BIDENTATE LIGANDS AND POLYDENTATE LIGAND PRECURSORS

JONATHAN R. DILWORTH, D. VAUGHAN GRIFFITHS and JONATHAN M. HUGHES
Department of Chemistry and Biological Chemistry, University of Essex, Colchester, CO4 3SQ, U.K.

As part of our studies into the synthesis of polydentate phosphine-containing ligands, we have investigated the preparation of the phosphines (**4**; X=O) and (**4**; X=S). These are of interest both as potential dianionic bidentate ligands and as useful precursors of more complex polydentate ligand systems. A synthesis of the thiol system (**4**; X=S) from 1,2-dinitrobenzene has been previously reported [1], but the observation [2], that 2-bromoaryl esters of phosphoric acid rearrange to give esters of arylphosphonic acids in the presence of alkyl lithiums, led us to consider whether a similar type of rearrangement might provide a convenient approach to both (**4**; X=S) and (**4**; X=O).



We have now confirmed this and have also shown that it is possible to extend this approach to bring about the simultaneous rearrangements of two 2-bromoaryl esters groups, such as in the conversion of (**5**; Ar=Ph) to (**6**; Ar=Ph). This offers a potential route to a range of tridentate and phosphine-capped tripodal tetradentate ligand systems.



[1] E.P. Kyba and C.N. Clubb, *Inorg. Chem.*, **23**, 4766, (1984).

[2] J. Heinicke, I. Böhle and A. Tzschach, *J. Organomet. Chem.*, **317**, 11, (1986).