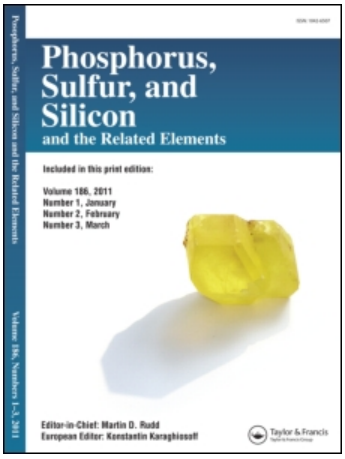

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Reactions of Sodiumdiphenylphosphinoformiat

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REACTIONS OF SODIUMDIPHENYLPHOSPHINOFORMIAT

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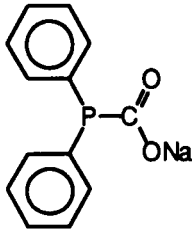
Sodiumdiphenylphosphinoformiat 1 can easily be prepared by reaction of Ph_2PNa with CO_2 [1]. Some reactions of 1 have been studied, resp. reinvestigated by us.



1

Thus, protolysis of 1 showed a clear dependance of pH. Two competition reaction mechanisms are discussed for the reaction in protic solvents like water and alcohols on the basis of ^{31}P- and ^{1}H-NMR-spectroscopic results.

With alkyliodides RI (R=Me, Et) CO_2 was eliminated from 1 and alkyldiphenylphosphines Ph_2PR are formed only. Reaction with dimethylsulfate and trimethylchlorosilane gave $Ph_2PCOOMe$, resp. $Ph_2PCOOSiMe_3$.

When 1 reacts with CS_2 at room temperature CO_2 is spontaneously evolved and sodiumdiphenylphosphinodithioformiate $Ph_2PCSSNa$ 2 is formed in quantitative yield according to:

$$\underset{1}{Ph_2PCOONa} + CS_2 \rightarrow \underset{2}{Ph_2PCSSNa} + CO_2 \quad (1)$$

Some more reactions of 1, e.g. with O_2 and S_8, are reported.

[1] Kuchen, W., Buchwald, H.; Chem. Ber. 92, 227 (1959)