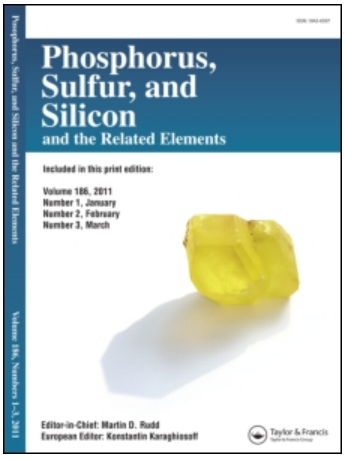

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Hydride Transfer Reactions of Aminomethylphosphines and Bis(Amino)Methanes with Diphenylboric Acid Ester in the Presence of Carbonyl Compounds

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HYDRIDE TRANSFER REACTIONS OF AMINOMETHYLPHOSPHINES AND BIS(AMINO)METHANES WITH DIPHENYLBORIC ACID ESTER IN THE PRESENCE OF CARBONYL COMPOUNDS.

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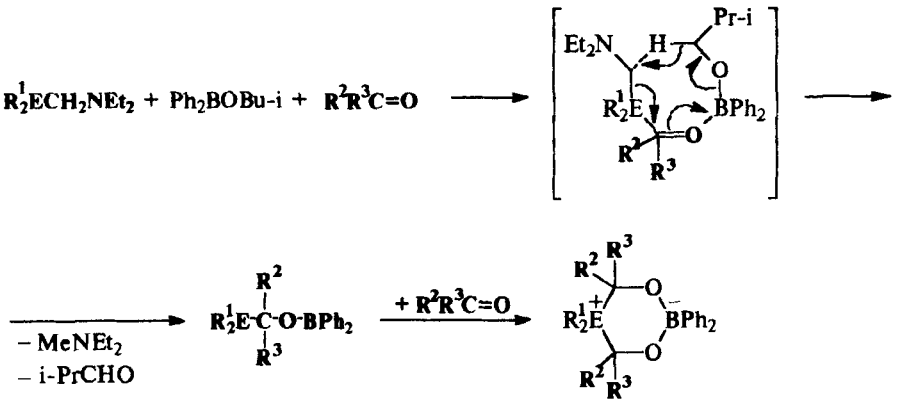
The interaction of diethylaminomethylphosphines and diphenylboric acid isobutyl ester proceeds only in the presence of active carbonyl compounds, namely alkyl aldehydes, followed by the formation of 1,3,2,5-dioxaborataphosphoniarinanes with the second molecule of the carbonyl compound. Reactions don't take place in the presence of ketones and aromatic aldehydes. Bis(N,N-diethylamino)methane reacts analogously to give corresponding N,B-containing zwitter-iones.



E=P; R^1=Me, Ph; R^2=H; R^3=H, n-Pr, i-Pr.
E=N; R^1=Et; R^2=H; R^3=H, i-Pr.

These reactions are aldehyde-initiated reduction of aminals or analogous compounds by borinic acid esters and lead to unusual replacement of the aminometyl group by the boroxymethyl group. Reactions proceed presumably by hydride transfer via cyclic transition state.