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Reactivity of phosphine oxide H3PO in the reactions with ketones

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Abstract

© 2016, Springer Science+Business Media New York.The reactivity of the electrochemically generated phosphine oxide H3PO towards ketones (acetone, ethyl methyl ketone, methyl n-propyl ketone, and tert-butyl methyl ketone) has been studied. It was found that this reaction led to the formation of mono- and bis(hydroxyalkyl)phosphine oxides of the formulas RR′C(OH)P(O)H2 and [RR′C(OH)]2P(O)H (R = Me; R′ = Me, Et, Pr) and represents the first example of the P—C bond formation involving the intermediate H3PO.

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Keywords

electrochemistry, ESI mass spectrometry, hydroxyalkylphosphine oxides, ketones, macroscale electrolysis, NMR spectroscopy, phosphine oxide H PO 3, white phosphorus