

Reactivity of phosphine oxide H₃PO in the reactions with ketones

Gorbachuk E., Badeeva E., Babaev V., Rizvanov I., Zinnatullin R., Pavlov P., Khayarov K., Yakhvarov D.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

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'(OH)P(O)H₂ and [RR'(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 H₃PO, white phosphorus