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Reaction of Red Phosphorus and Phosphine with Aryl(Hetaryl)Ethenes and -Ethyne

Nina Gusarova^a; Lambert Brandsma^b; Svetlana Malysheva^a; Svetlana Arbuzova^a; Boris Trofimov^a

^a Institute of Organic Chemistry, Siberian Branch, Russian Academy of Sciences, Irkutsk, Russia ^b Utrecht University, Utrecht, The Netherlands

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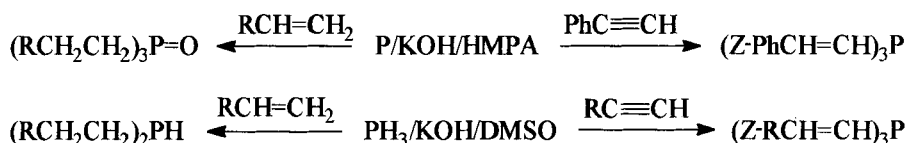
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REACTION OF RED PHOSPHORUS AND PHOSPHINE WITH ARYL(HETARYL)ETHENES AND -ETHYNES

NINA GUSAROVA, LAMBERT BRANDSMA*, SVETLANA
 MALYSHEVA, SVETLANA ARBUZOVA, BORIS TROFIMOV
 Institute of Organic Chemistry, Siberian Branch, Russian Academy of
 Sciences, 1, Favorsky Street, 664033 Irkutsk, Russia
 *Utrecht University, Padualaan 8, 3584 CH Utrecht, The Netherlands

Abstract Nucleophilic addition of phosphide anions generated from phosphorus red or phosphine to ethenes and ethynes in the presence of super bases to afford organylphosphines and -oxides has been performed.

Secondary and tertiary phosphines and phosphine oxides have been prepared in good yields by the reaction of phosphorus red or phosphine with ethenes [1] and ethynes [2] in the superbasic suspensions KOH/DMSO (or HMPA).



R = Ph, 4-F-C₆H₄, 2-furyl, 4-pyridyl, 2-methyl-5-pyridyl, 2-thienyl

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REFERENCES

1. B. A. Trofimov, L. Brandsma, S. N. Arbuzova, S. F. Malysheva, N. K. Gusarova, *Tetrahedron Lett.*, **35**, 7647 (1994).
2. B. A. Trofimov, N. K. Gusarova, S. N. Arbuzova, S. F. Malysheva, R. den Besten, L. Brandsma, *Synthesis*, **1995**, 387.