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Synthesis of o-Carboranyl Containing Esters of Pentavalent Phosphorus Acids

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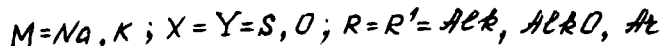
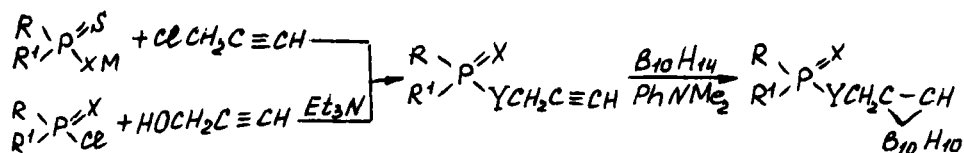
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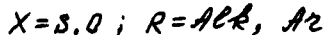
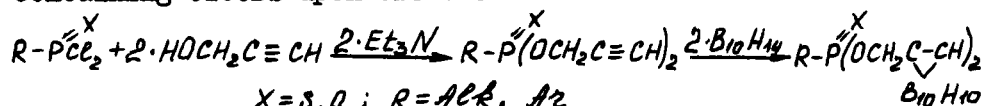
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A new method for the synthesis of o-carboranyl containing phosphoric, phosphonic and phosphinic acid esters, where the o-carboranyl group is in the ester group, has been developed. The propargyl esters of these acids were prepared in two ways: by the reaction of phosphorus acid salts with propargyl chlorid and by interaction of propargyl alcohol with acid chlorides in the presence of Et_3N . The propargyl esters have been converted into carboranyl containing compounds upon treatment with decaborane and dimethyl aniline



In the reaction of phosphonic acid dichlorides with two moles of propargyl alcohol dipropargyl phosphonates have been obtained. The latter were converted into corresponding dicarboranyl containing esters upon treatment with decaborane



Analogously, the reaction of tripropargyl phosphate with decaborane resulted in tris(carboranylmethyl) phosphate.