Synthesis and Transformations of Triphenylpropargylphosphonium Bromide

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Abstract—A method of the synthesis of triphenylpropargylphosphonium bromide is developed. Its isomerization and hydration in various solvents are studied, and reactions with secondary amines, triethylamine, and triphenylphosphine are carried out. It is established that secondary amines add to the intermediate allene isomer with subsequent migration of the formed double bond to the phosphorus atom. The reaction of triethylamine with triphenylpropargyl and triphenylethynyl bromides occurs similarly to alkaline hydrolysis involving attack of the amine on the phosphorus atom. Triphenylphosphine forms with triphenylpropargylphosphonium bromide a bis-salt with a terminal methylene group. Experimental evidence is obtained showing that for phosphoxazole derivatives to form from oximes derived from triphenyl-(oxomethyl)phosphonium salts that latter should bear an aryl substituent at the keto group.

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