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Phosphorylation of 3,4-dichloro-5-hydroxy-2-(5H)-furanone with tributylphosphine

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Abstract

The reaction of 3,4-dichloro-5-hydroxy-2(5H)-furanone with 2 mol of tributylphosphine involves substitution of both chlorine atoms to form an unstable diphosponium salt. The latter undergoes partial hydrolysis with cleavage of one of the P-C bonds, yielding finally a monophosphorylation product. A probable reaction pathway is considered in terms of quantum chemistry.

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