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Reaction of dimethylphosphorous acid with some α, B-unsaturated ketones

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Abstract

1. Depending on the amount of sodium methylate present, dimethylphosphorous acid adds to furfuralacetone and to the benzylidene derivatives of cyclopentanone and cyclohexanone either at the C=O group to give α-hydroxyphosphonates or to the C=C bond to give B-ketophosphonates. Diethylamine, and in the case of benzalcyclopentanone and benzalcyclohexanone also triethylamine, facilitate the formation of the α-hydroxyphosphonate. 2. The reaction of dimethylphosphorous acid with benzalacetophenone, benzal-α-tetralone, and 3,3-diphenyl-2-benzalhydrindone was studied. The presence of an aromatic ring α to the C=O group in the benzylidene derivatives of ketones hinders the formation of the α-hydroxyphosphonates and the reaction goes by the 1,4-addition scheme to give either the B-ketophosphonates or the stable enol forms. © 1975 Plenum Publishing Corporation.

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