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Structure and properties of reaction products of benzylidenebenzoylacetone with trimethyl phosphite and dimethylphosphorous acid

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Abstract

1. Trimethyl phosphite reacts with benzylidenebenzoylacetone to give the 1:1 adduct, which contains a pentacoordinated phosphorus atom. 2. In solution the obtained 1,2-oxaphospholene represents a mixture of two isomers, while in the solid state it has the structure of 2,2,2-trimethoxy-3,5-diphenyl-4-acetyl-1,2-oxa-4-phospholene. 3. The spectral and some of the chemical properties of the obtained phosphorane were studied. 4. Dimethylphosphorous acid adds to benzylidenebenzoylacetone to give the dimethyl ester of 1-phenyl-2-acetyl-2-benzoylethylphosphonic acid. Its keto-enol tautomerism was studied employing UV spectroscopy.

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