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# Structure of reaction products of some α, β-unsaturated carbonyl compounds with trimethyl phosphite and tri(dimethylamino)phosphine

Arbuzov B., Sorokina T., Vinogradova V., Sergeeva G.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

## Abstract

1. Trimethyl phosphite adds to 1,3-diphenyl-5-benzalbarbituric acid at -14°C to give a 1:1 adduct with a bipolar structure, which isomerizes to the methyl ether of the enolic form of the dimethyl ester of α-(1,3-diphenyl-5-barbituryl)benzylphosphonic acid. The latter is also formed when the reaction is run at room temperature. 2. The hydrolysis of the methyl ether of the enolic form of α-(1,3-diphenyl-5-barbituryl)benzylphosphonic acid leads to the formation of the enolic form of the dimethyl ester of α-(1,3-diphenyl-5-barbituryl)·benzylphosphonic acid. 3. The reaction of tri(dimethylamino)phosphine with 1,3-diphenyl-5-benzalbarbituric acid gave the crystalline 1:1 adduct, which had the structure of a bipolar ion containing the P-C bond. 4. The values of the dipole moments, as well as the parameters of the UV spectra, are given for a number of bipolar ions that were obtained using tri(dimethylamino)phosphine. © 1972 Consultants Bureau.

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