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On the Reaction of Triphenyltrithiophosphites with Copper (I) and Copper(II) Halides

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ON THE REACTION OF TRIPHENYLTRITHIOPHOSPHITES WITH COPPER (I) AND COPPER(II) HALIDES

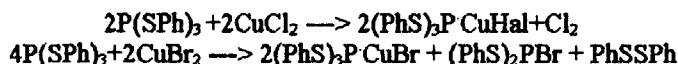
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Abstract Reactions of triphenyltrithiophosphite $(\text{PhS})_3\text{P}$ with copper (I) and copper (II) halides $(\text{CuHal}, \text{CuHal}_2)$, where $\text{Hal}=\text{Cl}, \text{Br}$ have been investigated.

Key words triphenyltrithiophosphite, copper halides, complex, coordination

Reactions of the triphenyltrithiophosphite with CuHal and CuHal_2 ($\text{Hal}=\text{Cl}, \text{Br}$) have been studied. Triphenyltrithiophosphite and copper(I) halides form crystalline polymeric complexes with metal coordination via phosphorus and sulphur atoms of the thiophosphite ligand. The structure of the complex was established by X-ray data.

The reaction between triphenyltrithiophosphite and copper(II) halides is accompanied by the reduction of the copper (II) to copper(I) and the evolution of the free halogen, which, in the case of CuCl_2 , is takes place, or, as in the case of CuBr_2 , reacts with trithiophosphite with the formation of diphenyldithiobromphosphite and diphenyldisulfide.



The influence of the nature of the solvent on the course of these reactions has been studied. While uncoordinated $(\text{PhS})_3\text{P}$ is unreactive towards ethanol, its 1:1 complex with Cu (I) was found to react with boiling ethanol with the formation of diethylphosphoric acid. It was established that CuCl catalyzes the reaction of $(\text{PhS})_3\text{P}$ with ethanol.

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