SYNTHESIS AND PROPERTIES OF PHOSPHOR-CONTAINING Ethers OF ALLYL SERIES

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Phosphor containing organic compounds with multiple bond allow to synthesize various functional substituted compounds (including cyclic structure) of phosphor on their base, which are perspective for use of them as insecticides, medical preparations, antipyrenes, inhibitors of corrosion, additions to lubricating oils, etc. In this connection the synthesis and investigation of such compounds is of definite scientific and practical interest.

The investigations showed that monoallyl and monometal ethers of ethyleneglycol in the reactions with trichloride phosphor in dry ether form the corresponding allylethoxydichlorophosphite and methallylethoxydichlorophosphites with yields to 70-80 %. The synthesized dichlorophosphites easily undergo the reaction with aliphatic alcohols in the presence of acceptor (pyridine) with formation of corresponding new derivatives (yield 65-75%):

\[
R\text{-OCH}_2\text{CH}_2\text{OPCl}_2 + R'\text{OH} \xrightarrow{\text{pyridine}} R\text{-OCH}_2\text{CH}_2\text{OP(OR')}_2
\]

where \( R = \text{CH}_2\text{CHCH}_2; \text{CH}_2\text{C(CH}_3\text{)}\text{CH}_2; \) \( R' = \text{C}_2\text{H}_5, \text{C}_3\text{H}_7 \)

Phosphor containing ethers of allyl and methallyl series undergo the reaction with dichlorocarbene in conditions of interphase catalysis in the presence of triethylbenzylammonium chloride with formation of corresponding dichlorocyclopropane derivatives of phosphor.

The abovementioned phosphor containing ethers of allyl series undergoes the reaction of diene condensation with polychloroderivative cyclopentadienes (hexachlorocyclopentadiene and 5,5-dimethoxytetrachlorocyclopentadiene) at 120-125°C with formation of phosphor containing ethers of polychlorocyclopentene series with yields 70-80%.