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## Phosphorus, Sulfur, and Silicon and the Related Elements

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### The Influence of the Molar Ratio $\text{SPCl}_3$ : Phenol on the Formation of the Disubstituted Secondary Products in the Liquid-Liquid PTC Synthesis of Arylthiophosphoric Acid Dichlorides

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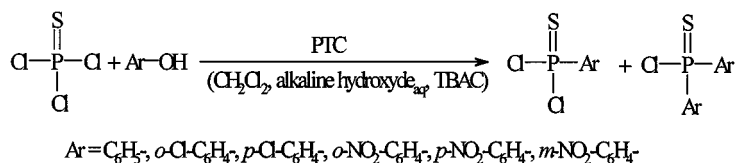
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## THE INFLUENCE OF THE MOLAR RATIO $\text{SPCl}_3$ : PHENOL ON THE FORMATION OF THE DISUBSTITUTED SECONDARY PRODUCTS IN THE LIQUID-LIQUID PTC SYNTHESIS OF ARYLTHIOPHOSPHORIC ACID DICHLORIDES

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The influence of the molar ratio  $\text{SPCl}_3$ : phenol on the formation of secondary product, diarylthiophosphoric acid chlorides in liquid-liquid phase transfer catalyzed synthesis of arylthiophosphoric acid dichlorides was investigated for different reaction conditions.



SCHEME 1

The reason for this study is that the arylthiophosphoric acid dichlorides are used as reactants for consecutive reactions without purification and the content of the secondary product can influence those. The molar ratio is not critical in the case of phenol, but for the substituted phenols it represents one of the most important factors that controls the content of the secondary product formed in the reaction.

Generally, the increase of the value of molar ratio, reduce the content in diarylthiophosphoric acid chloride, but this value is less than non-PTC synthetic routes.

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