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Tetraphosphorus Trisulfide in the Synthesis of Organothiophosphorus Compounds

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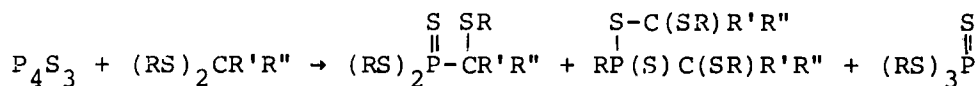
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TETRAPHOSPHORUS TRISULFIDE IN THE SYNTHESIS OF ORGANTHIOPHOSPHORUS COMPOUNDS

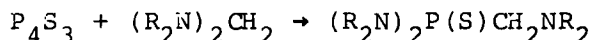
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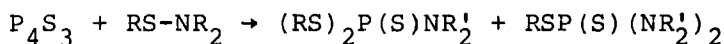
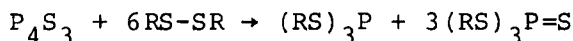
The investigations of the reactions of lower phosphorus sulfides with organic substances can result in novel non-traditional methods of the synthesis of organophosphorus compounds. Tetraphosphorus trisulfide was proved to react with thioacetals, to give addition products of the α -alkylthioalkyl thionphosphonate structure and tetrathiophosphates.



The reaction with amins of formaldehyde proceeds under milder conditions and results in α -aminoalkyl thionphosphonates.



The interaction of tetraphosphorus trisulfide with disulfides and sulfenamides proves a convenient method for the preparation of tetrathiophosphates and non-symmetrical mixed amidothiophosphates.



Reactions with amins, disulfides and sulfenamides are catalyzed by amines.