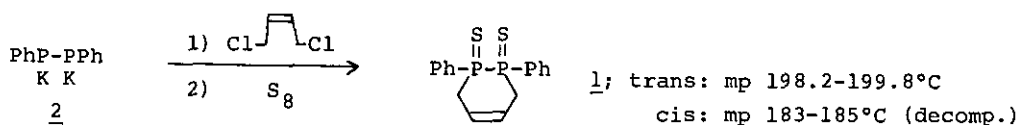


PREPARATION AND THERMOLYSIS OF 1,2,3,6-TETRAHYDRO-1,2-DIPHENYL-
1^λ,2^λ-DIPHOSPHORIN 1,2-DISULFIDE

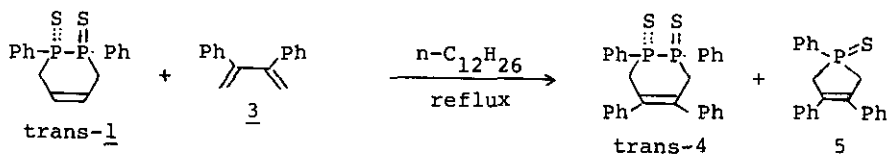
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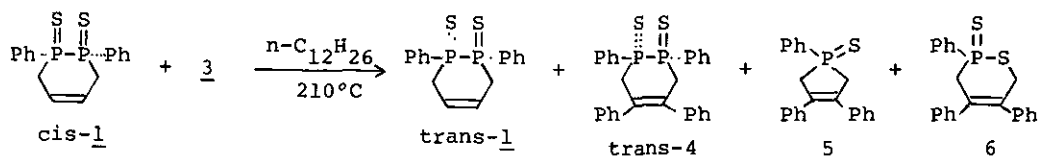
The titled compound (1) was prepared in 53% yield by reaction of 1,2-diphenyl-1,2-dipotassiodiphosphane (2) with cis-1,4-dichloro-2-butene, followed by sulfurization. Trans and cis isomers were separated by dry column chromatography on silica gel in a ratio of 8:1.



Trans-1 was refluxed in dodecane for 5h with 2,3-diphenyl-1,3-butadiene (3) to give trans-1,2,3,6-tetrahydro-1,2,4,5-tetraphenyl-1^λ,2^λ-diphosphorin 1,2-disulfide (4) and 1,3,4-triphenyl-3-phospholene 1-sulfide (5) in 15 and 50% yields, respectively.



On the other hand, cis-1 was heated at 210°C for 1h to afford trans-1, trans-4, 5, and 3,6-dihydro-2,4,5-triphenyl-2H-1,2^λ-thiaphosphorin 2-sulfide (6) in 12, 11, 32%, and trace yields, respectively. Temperature dependency was observed in a ratio of 5 to 6.



The possible mechanism is discussed.