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α,ω -Bis(Dialkylthiophosphoryl)Sulfanes-Products of the Alcoholysis of Sulfur-Rich Phosphorus Sulfides

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α,ω -BIS(DIALKYLTHIOPHOSPHORYL)SULFANES - PRODUCTS OF THE ALCOHOLYSIS OF SULFUR-RICH PHOSPHORUS SULFIDES

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The high solubility of sulfur-rich phosphorus sulfides in CS_2 - especially in the range $\text{S}:\text{P}=2.7$ to 4 - is the motive for new investigations on this system. DEMARCO¹ supposed the existence of "molecular products", but he could not prove it by spectroscopic and chemical methods. As we have found the formation of α,ω -bis(fluorodithiophosphoryl)oligosulfanes at the nucleophilic degradation of phosphorus sulfides with fluorides gives no proof for the existence of oligosulfane bridges in the sulfur-rich phosphorus sulfides.² On the reaction of P_4S_{10} , elementary sulfur and alkylfluorides the same products are formed. Sulfur-rich phosphorus sulfides and alcohols also react to mixtures of α,ω -bis(dialkylthiophosphoryl)sulfanes. But these compounds are not obtained by the reaction of P_4S_{10} and sulfur with alcohols.

1. M.C. Demarcq, Phosphorus and Sulfur 33, 127 (1987).
2. J. Neels, A.-R. Grimmer, M. Meisel, G.-U. Wolf, H. Jancke, Z. anorg. allg. Chem. 547, 83 (1987).