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Complex Chemical Synthesis of Unstable Sulfinyl- and Sulfonyl Derivatives of Phosphorus(III)

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The phosphorus(III) homologues of sulfonamides, $R'_2P-S(O)_2R$, are hitherto unknown. This is also in the case of phosphorus(V) derivatives: sulfinylphosphinates undergo symmetrization reactions to the homogeneous anhydrides. Sulfinylphosphinites, the O-isomers of sulfonylphosphanes, can only be built up as unstable ligands in the coordination sphere of transition metals, where the $Br(CO)_4Mn$ -fragment seems to be more stable than the $(CO)_5M$ -fragment ($M = Cr, Mo, W$). Thus, we now synthesized the iodo complexes $I(CO)_4Mn[P(C_6H_5)_2X]$ ($X = H, SiMe_3$) as suitable starting material for the synthesis of SO -, SO_2 -, RSO - and RSO_2 -derivatives of coordinated phosphorus(III). Because of the surprising cis-position of the iodo and silyl group (x-ray structure analysis) the silylphosphane complex 2 is also of high interest to 1,2-elimination reactions to give metal-phosphorus double bonds.

