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Tri-*tert*-butylcyclotriphosphan-monoxid, $(PBu^t)_3O$ – Bildung und ^{31}P-NMR-spektroskopische Strukturbestimmung

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Tri-*tert*-butylcyclotriphosphane Monoxide, $(PBu^t)_3O$ – Formation and Structure Determination by ^{31}P NMR Spectroscopy

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Tri-*tert*-butylcyclotriphosphane Monoxide, 1,2,3-Tri-*tert*-butyl-1-oxocyclotriphosphane, Tetra-*tert*-butylcyclotetraphosphane Monoxide, Tetra-*tert*-butylcyclotetraphosphane Dioxide, 1,2,3,4-Tetra-*tert*-butyl-1,2-dioxocyclotetraphosphane

The partially oxidized cyclotriphosphane $(PBu^t)_3O$ (1,2,3-tri-*tert*-butyl-1-oxocyclotriphosphane) (**1**) has been obtained by [2+1] cyclocondensation of $K(Bu^t)P-P(Bu^t)K$ with $Bu^tP(O)Cl_2$ in toluene at −78 °C. The cyclophosphanes $(PBu^t)_4$ and $(PBu^t)_3$ as well as small amounts of the open-chain triphosphane $[Bu^tP(O)Cl]_2P(O)Bu^t$ are also formed. In contrast to the unoxidized compound $(PBu^t)_3$, compound **1** is not stable at room temperature, but decomposes above −30 °C undergoing rearrangement into the cyclotetraphosphanes $(PBu^t)_4O$ (**2**), $(PBu^t)_4O_2$ (**3**), and $(PBu^t)_4$. The ^{31}P NMR parameters of **1** and **3** are reported and discussed.