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## Phosphorus, Sulfur, and Silicon and the Related Elements

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## Phosphorus Compounds of Polyols. Unusual Equilibria Connecting Bicyclic Phosphites and Polycyclic Phosphoranes

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PHOSPHORUS COMPOUNDS OF POLYOLS. UNUSUAL EQUILIBRIA CONNECTING BICYCLIC PHOSPHITES AND POLYCYCLIC PHOSPHORANES

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Threitol or (and) xylitol react with hexamethylphosphorus triamide giving bicyclic phosphites  $\underline{1}$ ,  $\underline{2}$ , whose structure has been established by NMR spectroscopy. These compounds undergo, at 60°C, fast oligomerisation leading, particularly, to polycyclic phosphoranes  $\underline{3}$ ,  $\underline{4}$ . In presence of diethylamine  $\underline{3}$ ,  $\underline{4}$  give again phosphites  $\underline{1}$ ,  $\underline{2}$ .

$$\begin{array}{c} \text{CH}_2\text{OH} \\ \text{HO} \\ \text{OH} \\ \text{HO} \\ \text{CH}_2\text{OH} \\ \text{Threitol} \\ \text{P} (\text{NMe}_2)_3 \\ \text{CH}_2\text{OH} \\ \text{HO} \\ \text{OH} \\$$