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Azaphosphabenzene and their Classical Valency Isomers

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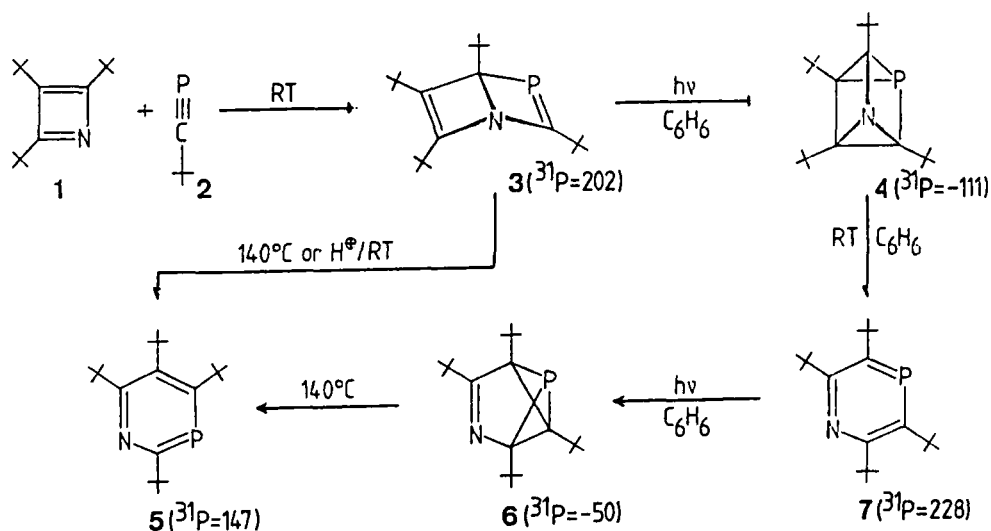
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AZAPHOSPHABENZENES AND THEIR CLASSICAL VALENCY ISOMERS

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In contrast to phosphabenzene so far no valency isomers of azaphosphabenzene have been described in literature. They can be synthesized starting with the azacyclobutadiene 1 and the phosphalkyne 2 by a sequence of thermal and photochemical transformations.



The Dewar azaphosphabenzene 3 (accessible from 1 and 2 in a regio-specific cycloaddition reaction) can be isomerised by irradiation into the prismane 4, which at 25°C slowly yields the heteroaromatic compound 7. Photochemical excitation of 7 leads to the azaphosphabenzvalene 6. Both, the bicyclic 3 and the tricyclic 6 are extremely stable in the thermal sense: Isomerization into the 1,3-azaphosphabenzene 5 only occurs at 140°C.