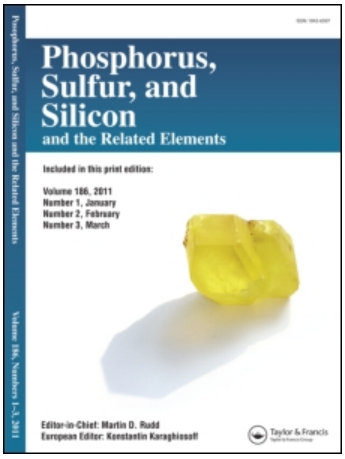

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

LD³- and λ⁵-1,3-Diphosphacyclobutadienes by Dimerisation of λ³- and λ⁵-Phospha-alkynes

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To cite this Article Binger, P. , Milczarek, R. , Mynott, R. , Regitz, M. , Keller, H. and Rösch, W.(1987) 'LD³- and λ⁵-1,3-Diphosphacyclobutadienes by Dimerisation of λ³- and λ⁵-Phospha-alkynes', Phosphorus, Sulfur, and Silicon and the Related Elements, 30: 3, 762
To link to this Article: DOI: 10.1080/03086648708079254
URL: http://dx.doi.org/10.1080/03086648708079254

λ^3- and λ^5-1,3-Diphosphacyclobutadienes by Dimerisation of λ^3- and λ^5-Phospha-alkynes

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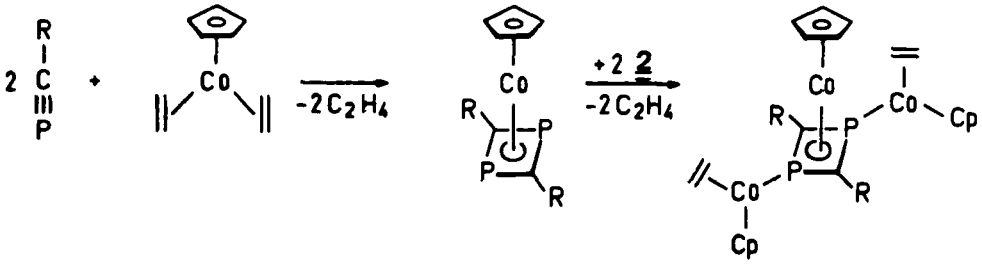
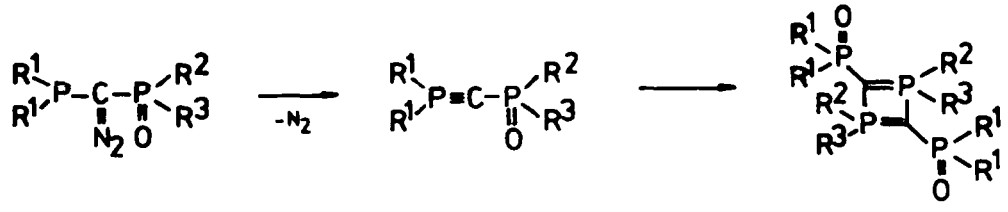
λ^3-Phosphaalkynes 1 dimerize in the presence of cyclopentadienylcobalt-bis(ethylene) (2) to yield λ^3-1,3-diphosphacyclobutadienes, which are stabilized by complex formation (3). An excess of 2, finally, is responsible for the formation of the complex 4.



1 2 3 4

λ^5-Phosphaalkynes(phosphinocarbenes) (6) - short-lived intermediates arising from the decomposition of the phosphino diazo compounds 5 - dimerize spontaneously to the λ^5-1,3-diphosphacyclobutadienes 7. The ring formation is accompanied by an unusual P → P oxygen-shift.



5 6 7