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Cycloaddition Reactions of the Metal Phosphorus Double Bonded Complexes $\text{CP}(\text{CO})_2\text{M}=\text{PR}_2$ ($\text{M} = \text{MO}, \text{W}$; $\text{R} = \text{Alkyl}, \text{Aryl}$)

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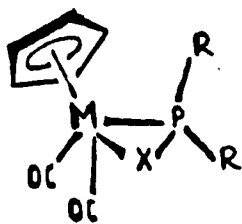
CYCLOADDITION REACTIONS OF THE METAL PHOSPHORUS
 DOUBLE BONDED COMPLEXES $\text{Cp}(\text{CO})_2\text{M}=\text{PR}_2$ ($\text{M} = \text{Mo}, \text{W}$;
 $\text{R} = \text{Alkyl}, \text{Aryl}$)

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The reaction of the metal phosphorus double bonded species
 $\text{Cp}(\text{CO})_2\text{M}=\text{PR}_2$ ($\text{M} = \text{Mo}, \text{W}$; $\text{R} = \text{aryl}, \text{alkyl}$) (1)¹⁾ with di-
 verse diazoalkanes, alkenes, alkynes and dienes results in
 the facile formation of the [2+1]-, [2+2]- and [2+4]-cyclo-
 addition products 2a-c.



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- $\text{X} = -\text{CR}_2-$ (a),
 $-\text{CR}_2-\text{CR}_2-$ (b),
 $-\text{RC}=\text{CR}-$ (c),
 $\text{CH}_2-\text{C}(\text{Me})=\text{C}(\text{Me})=\text{CH}_2$ (d)
 CuCl (e), AgCl (f),
 $\text{AuCl}(\text{PPh}_3)$ (g), $(\text{OC})_2\text{RhCl}$ (h)

The high reactivity of the $\text{M}=\text{P}$ -complexes 1 is further dem-
 onstrated by the rapid addition of the transition metalhal-
 ides CuCl , AgCl , $\text{AuCl}(\text{PPh}_3)$ and $[(\text{CO})_2\text{RhCl}]_2$ to the $\text{M}=\text{P}$
 bond. The structure of the phosphido bridged hetero dinu-
 clear complexes 2e-h obtained by this novel access will be
 discussed especially in comparison to those of 1.

1) K. Jörg, W. Malisch, W. Reich, A. Meyer u. U. Schubert,
 Angew. Chem. 98, 103, (1986), Angew. Chem. Int. Ed. Engl.
 25, 92 (1986).

2) W. Malisch, K. Jörg, E. Groß, M. Schmeuß u.
 A. Meyer, Phosphorus and Sulfur, 1986, 26, 25.