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Diazadiylide Anions $[\text{Ph}_2\text{P}(\text{NR})_2]^-$ - (R = CN, C(O)Ph) as Ambident Bridging and Chelating Ligands

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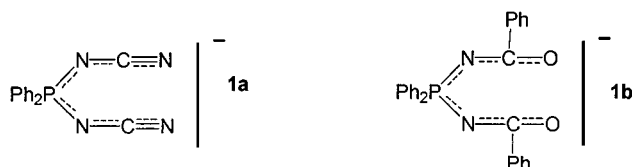
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DIAZADIYLIDE ANIONS $[\text{Ph}_2\text{P}(\text{NR})_2]^-$ ($\text{R} = \text{CN}$, $\text{C}(\text{O})\text{Ph}$) AS AMBIDENT BRIDGING AND CHELATING LIGANDS

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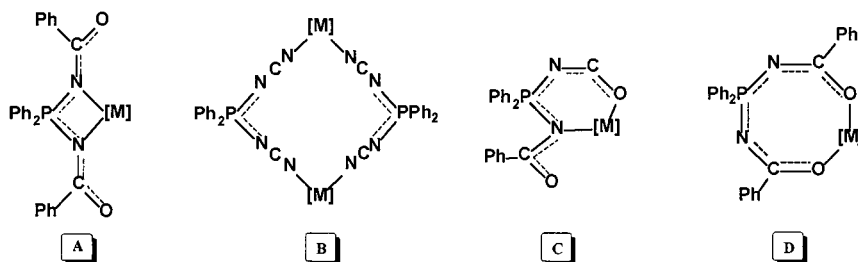
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We recently reported the synthesis of the first examples of stabilized diazadiylides **1** $\text{M}[\text{Ph}_2\text{P}(\text{NR})_2]$ ($\text{R} = \text{CN}$, $\text{C}(\text{O})\text{Ar}$; $\text{M} = \text{Li}$, Na).



SCHEME 1

We present here the preparation, the molecular and crystal structures of corresponding complexes $\text{M}^{\text{I}}\text{X}$ (Li , Na , K , Rb , Cs , Ag), $\text{M}^{\text{II}}\text{X}_2$ (Co , Cu) and $\text{M}^{\text{III}}\text{X}_3$ (La), and related derivatives $[\text{MX}_m\text{L}_n]$. In contrast to **1a** ($\text{R} = \text{CN}$) which functions as bridging ligand, coordinating metal



SCHEME 2

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ions exclusively via both nitrile N-atoms, **1b** ($R = C(O)Ph$) chelates metal atoms. Depending on the character of the metal ions and the coligands we observe two- and four-dentate behaviour together with O,O' -, O,N -, and N,N' -coordination.

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