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PHOSPHINIDENE TRANSFER REACTIONS FROM 7-PHOSPHANORBORNADIENES.

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Unprotected 7-phosphanorbornadienes are attractive precursors for singlet phosphinidenes. Herein we report that 7-phosphanorbornadiene derivatives serve as phosphinidene transfer reagents under mild conditions via cheletropic elimination of an aromatic moiety. Unprotected dibenzo-7λ3-phosphanorbornadiene derivatives RP**A** (**A** = $C_{14}H_{10}$ or anthracene; R = ^{t}Bu, NR'$_2$) can be synthesized by treatment of the corresponding phosphorus dichloride $RPCl_2$ with Mg**A**•3THF, in cold THF (up to 60% isolated yields). The phosphinidene unit can be transferred to a number of unsaturated substrates (1,3-dienes, alkenes, carbenes and 1,2-quinones). Additionally, the ClP**A** derivative was investigated for P atom transfer reactions to metal complexes. The identities of the species discussed here were established using X-ray diffraction or 1-D and 2-D NMR spectroscopy techniques.