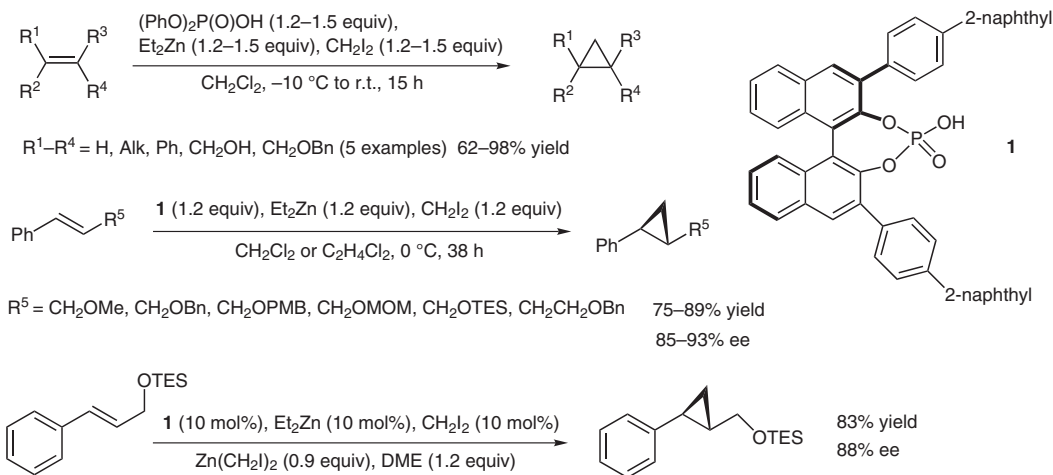


M.-C. LACASSE, C. POULARD, A. B. CHARETTE (UNIVERSITÉ DE MONTRÉAL, CANADA)  
Iodomethylzinc Phosphates: Powerful Reagents for the Cyclopropanation of Alkenes  
*J. Am. Chem. Soc.* **2005**, *127*, 12440-12441.

## New Powerful Reagents for Cyclopropanation of Alkenes



**Significance:** Diaryl phosphate was shown to form an adduct with the iodomethylzinc carbenoid  $[(\text{PhO})_2\text{P}(\text{O})\text{OCH}_2\text{ZnI}]$ , which may serve as a powerful cyclopropanating reagent for alkenes. It is sufficiently stable for storage and practical to use. The design of a BINOL-based chiral auxiliary led to the compound that can be used in catalytic amounts, offering good yields and enantioselectivities in the cyclopropanation of some allyl ethers.

**Comment:** The use of a diaryl phosphate moiety for the preparation of a zinc carbenoid allows the introduction of a chiral auxiliary, based on a BINOL derivative. Iodomethylzinc diphenyl phosphate itself is a solid, stable for some weeks at 4 °C and a powerful cyclopropanating agent, which is effective in almost equimolar amounts. Alkenes without proximal directing groups can be easily involved in the reaction. The zinc carbenoid, based on the chiral phosphoric acid **1** reacts with protected allylic ethers, leading to good yields and enantioselectivity. Homoallylic ethers are equally suitable, whereas bis(homo)allylic derivatives led to poor conversion. In some cases, the catalyst can be used in catalytic amounts with still good selectivity. This approach to enantioselective cyclopropanation looks very promising, provided that new and more readily available auxiliaries will be found.