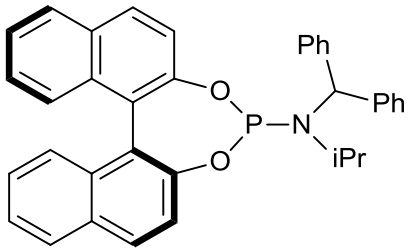
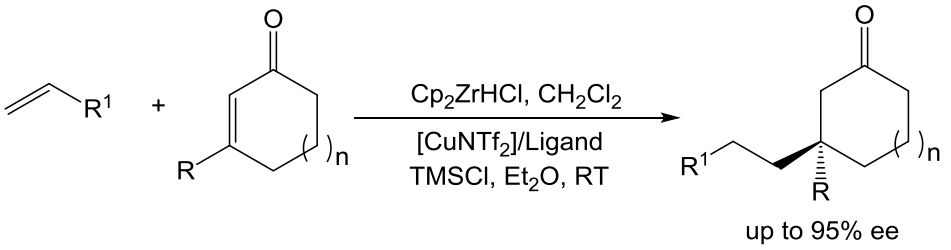
Catalog # D281950 (11b*S*)-N-benzhydryl-N-isopropyldinaphtho[2,1-*d*:1',2'-*f*][1,3,2] dioxaphosphepin-4-amine



Patent granted US20160074852, pending EP2986375

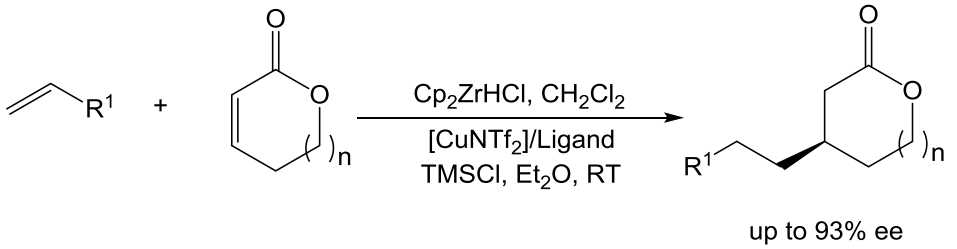
Technical notes:

1. Ligand used to perform asymmetric 1,4-addition reactions to conjugated enones to form quaternary centers.
2. Asymmetric conjugate addition of alkylzirconium reagents to a α,β-unsaturated lactones.



up to 95% ee

Technical Note (1)
Refs. (1,2)



up to 93% ee

Technical Note (1)
Ref. (3)

References:

1. *Angew. Chem. Int. Ed.,* **2013**, *52*, 7995.
2. *Nature Protoc.,* **2014**, *9*, 104.
3. *Org. Lett.,* **2014**, *16*, 3288.