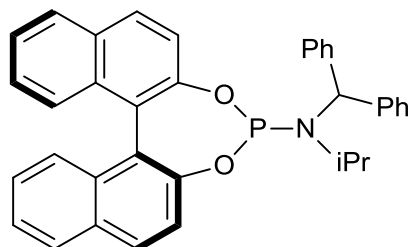


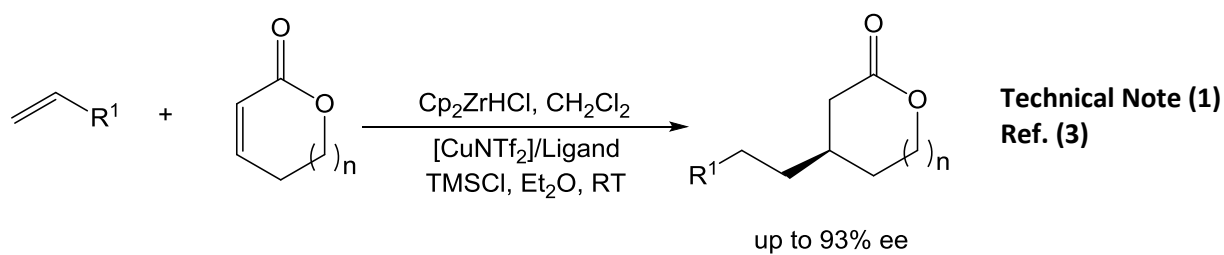
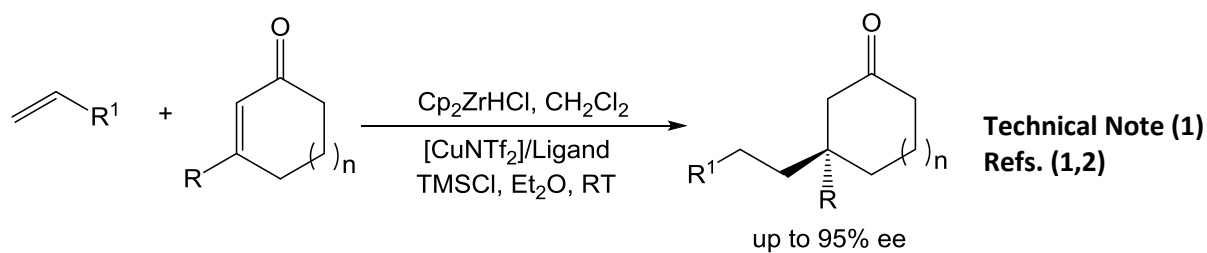
Catalog # 15-0860 (11b5)-N-benzhydryl-N-isopropylidnapththo[2,1-d:1',2'-f][1,3,2] dioxaphosphepin-4-amine



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  $\alpha,\beta$ -unsaturated lactones.



References:

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