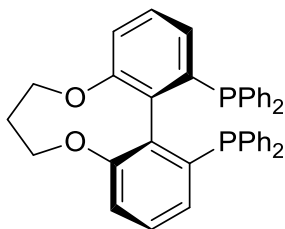


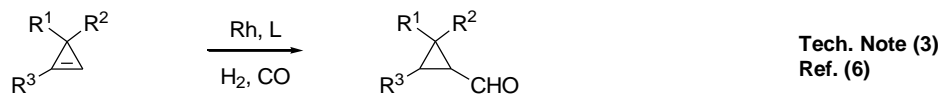
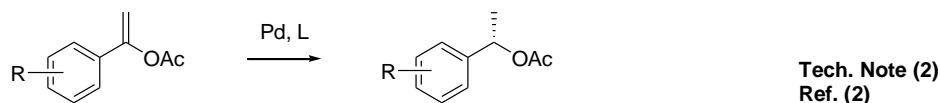
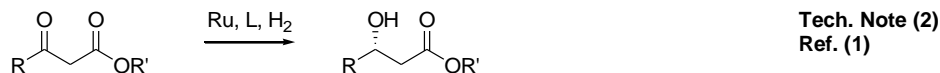
Catalog # 15-0175 (R)-(-)-1,13-Bis(diphenylphosphino)-7,8-dihydro-6H-dibenzo[f,h][1,5]dioxonin, 95% (R)-C<sub>3</sub>-TUNEPHOS



Note: Sold in collaboration with Chiral Quest for research purposes only. US Patent No. 6,521,769; additional patents pending. Chiral Quest Catalyst and Ligand Toolbox Kit component.

Technical Notes:

1. New generation of chiral biaryl phosphine ligands with tunable dihedral angles. The ability to modify the dihedral angle allows for the fine tuning of the catalyst system and optimization of enantioselectivity.
2. Ru-C<sub>3</sub>-TUNEPHOS complexes are used for asymmetric hydrogenation of  $\beta$ -ketoesters<sup>1</sup>, enol acetates<sup>2</sup>, cyclic  $\beta$ -amino acids<sup>3</sup>,  $\alpha$ -phthalimide ketones<sup>4</sup>, and  $\alpha$ -keto esters<sup>5</sup>.
3. Rh-catalyzed hydroformylation of cyclopropenes.



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