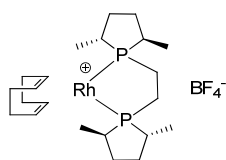
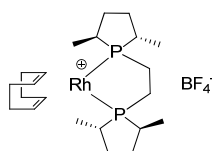




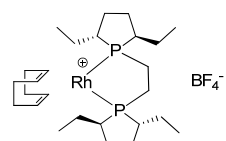
Rhodium BPE™ Phospholane Catalysts¹



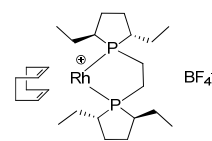
K45-0007
 [((*R,R*)-Me-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-dimethylphospholano)-
 ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₂H₄₀BF₄P₂Rh; F.W: 556.21; [305818-67-1]



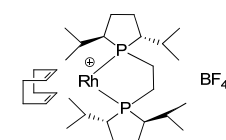
K45-0008
 [((*S,S*)-Me-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-dimethylphospholano)-
 ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₂H₄₀BF₄P₂Rh; F.W: 556.21; [213343-65-8]



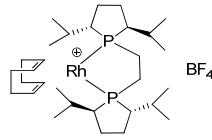
K45-0015
 [((*R,R*)-Et-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diethylphospholano)-
 ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₆H₄₈BF₄P₂Rh; F.W: 612.32



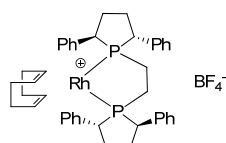
K45-0016
 [((*S,S*)-Et-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diethylphospholano)-
 ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₆H₄₈BF₄P₂Rh; F.W: 612.32



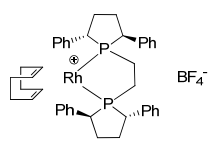
K45-0020
 [((*R,R*)-iPr-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diisopropylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₀H₅₆BF₄P₂Rh; F.W: 668.42



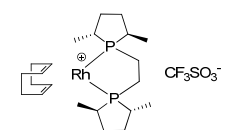
K45-0019
 [((*S,S*)-iPr-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diisopropylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₀H₅₆BF₄P₂Rh; F.W: 668.42



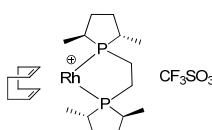
K45-0027
 [((*R,R*)-Ph-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diphenylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₄₂H₄₈BF₄P₂Rh; F.W: 804.49; [528565-84-6]



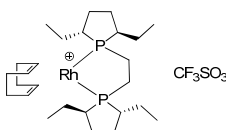
K45-0028
 [((*S,S*)-Ph-BPE)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diphenylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₄₂H₄₈BF₄P₂Rh; F.W: 804.49



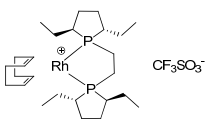
K45-0003
 [((*R,R*)-Me-BPE)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-dimethylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₃H₄₀F₃O₃P₂Rh₅Rh; F.W: 618.48



K45-0004
 [((*S,S*)-Me-BPE)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-dimethylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₃H₄₀F₃O₃P₂Rh₅Rh; F.W: 618.48

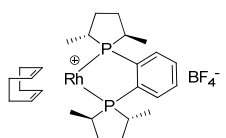


K45-0011
 [((*R,R*)-Et-BPE)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diethylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₇H₄₈F₃O₃P₂Rh₅Rh; F.W: 674.58

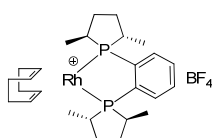


K45-0012
 [((*S,S*)-Et-BPE)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diethylphosphola-
 no)ethane(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₇H₄₈F₃O₃P₂Rh₅Rh; F.W: 674.58

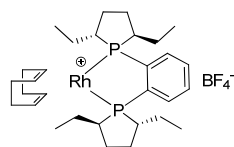
Rhodium DuPhos™ Phospholane Catalysts¹



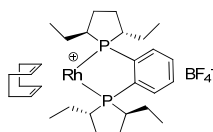
K45-0005
 [((*R,R*)-Me-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-dimethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₆H₄₀BF₄P₂Rh; F.W: 604.25; [210057-23-0]



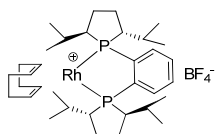
K45-0006
 [((*S,S*)-Me-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-dimethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₂₆H₄₀BF₄P₂Rh; F.W: 604.25; [205064-10-4]



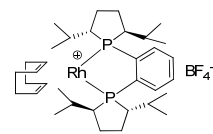
K45-0013
 [((*R,R*)-Et-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₀H₄₈BF₄P₂Rh; F.W: 660.36; [228121-39-9]



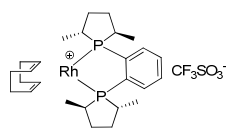
K45-0014
 [((*S,S*)-Et-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₀H₄₈BF₄P₂Rh; F.W: 660.36; [213343-64-7]



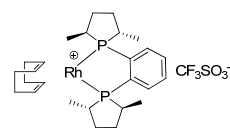
K45-0018
 [((*R,R*)-iPr-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diisopropylphosphola-
 no)benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₄H₅₆BF₄P₂Rh; F.W: 716.47; [569650-64-2]



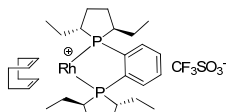
K45-0017
 [((*S,S*)-iPr-DuPhos)Rh(COD)]BF₄, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diisopropylphosphola-
 no)benzene(cyclooctadiene)rhodium(I)
 tetrafluoroborate
 C₃₄H₅₆BF₄P₂Rh; F.W: 716.47



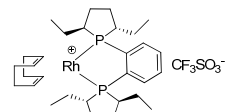
K45-0001
 [((*R,R*)-Me-DuPhos)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-dimethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₇H₄₀F₃O₃P₂RhS; F.W: 666.52; [187682-63-9]



K45-0002
 [((*S,S*)-Me-DuPhos)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-dimethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₂₇H₄₀F₃O₃P₂RhS; F.W: 666.52; [136705-75-4]



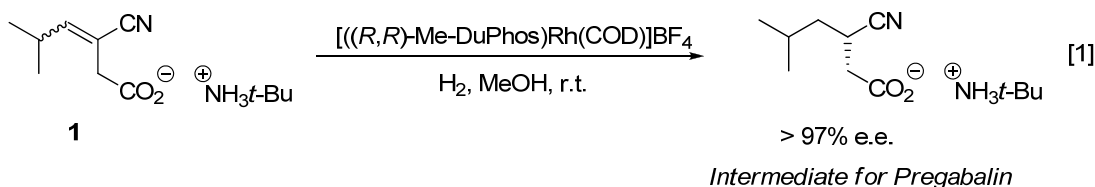
K45-0009
 [((*R,R*)-Et-DuPhos)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*R*,5*R*)-2,5-diethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₃₁H₄₈F₃O₃P₂RhS; F.W: 722.62; [136705-77-6]



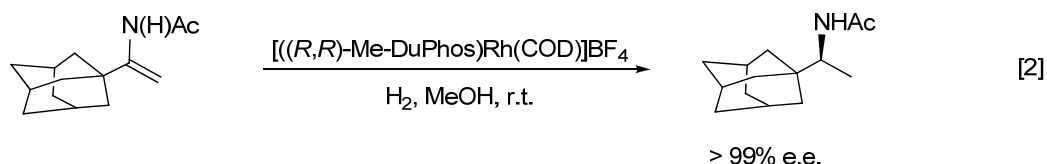
K45-00010
 [((*S,S*)-Et-DuPhos)Rh(COD)]OTf, ≥97.0%
 1,2-Bis((2*S*,5*S*)-2,5-diethylphospholano)-
 benzene(cyclooctadiene)rhodium(I)
 trifluoromethanesulfonate
 C₃₁H₄₈F₃O₃P₂RhS; F.W: 722.62; [142184-30-3]

The BPE and DuPhos ligands arguably constitute one of the most versatile and successful ligand families. Rhodium complexes with chiral phospholanes are highly selective, active, and productive catalysts for various enantioselective reactions, especially asymmetric hydrogenation (Reactions 1-2).²⁻³ The reduction of **1** provides an intermediate for the anticonvulsant drug Pregabalin (Reaction 1).² Moreover, multikilogram quantities of the intermediate (*S*)-phorenol have been manufactured through efficient hydrogenation of the corresponding enol acetate (Reaction 3).⁴ The [4+1] cycloaddition between vinylallenes and carbon monoxide affords complex cyclopentenone derivatives in a single step with high enantiopurities (Reaction 4).⁵

Asymmetric Hydrogenation of Alkenes:²

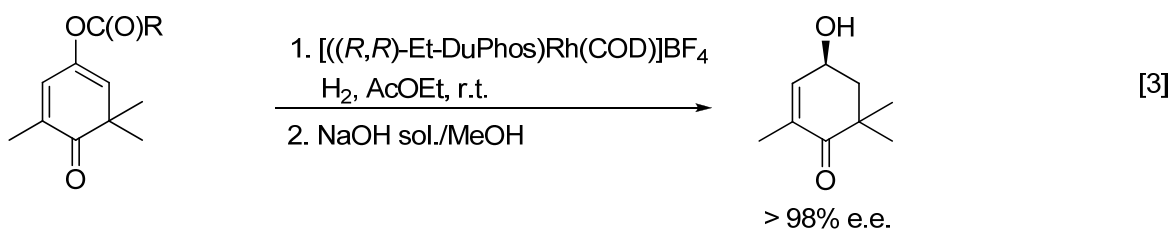


Enantioselective Hydrogenation of Enamides:³



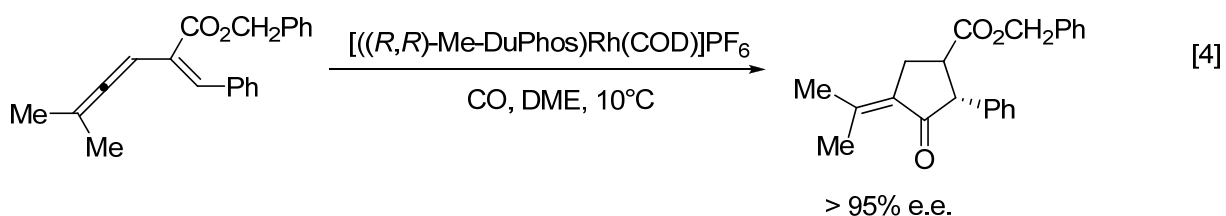


Enantioselective Hydrogenation of Ketoisophorone Derivative:⁴



(S)-Phorenol: Intermediate for Zeaxanthin

Asymmetric [4+1] Cycloaddition:⁵



References

1. Sold under license from Dupont for research purposes
2. Burk, M. J. *et al. J. Org. Chem.* **2003**, *68*, 5731
3. Burk, M. J. *et al. J. Org. Chem.* **1998**, *63*, 6084
4. US patent 5543559
5. Murakami M. *et al. J. Am. Chem. Soc.* **1995**, *121*, 4130