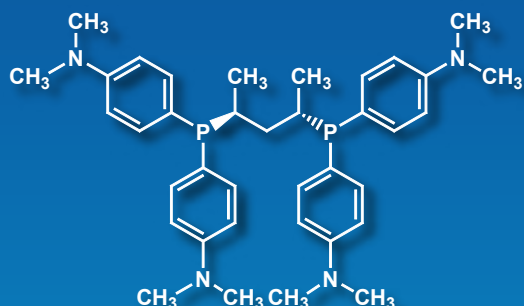
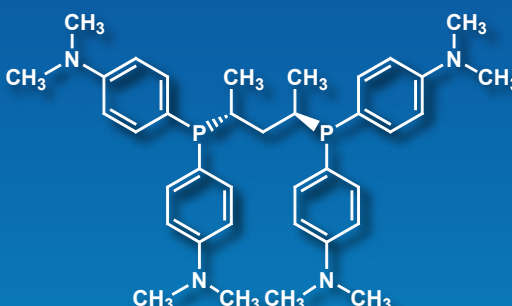


# Chiral Phosphine Ligands Skewphos Derivatives



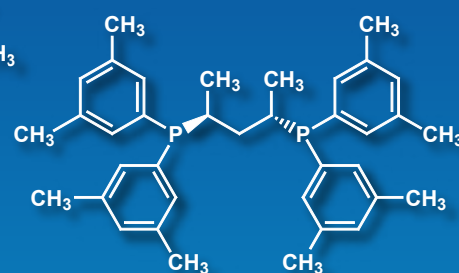
(2S,4S)-2,4-Bis[bis(4-dimethylamino)phenyl]phosphino]pentane

200mg  
[P2852]



(2R,4R)-2,4-Bis[bis(4-dimethylamino)phenyl]phosphino]pentane

200mg  
[P2853]



(2S,4S)-2,4-Bis[bis(3,5-dimethylphenyl)phosphino]pentane

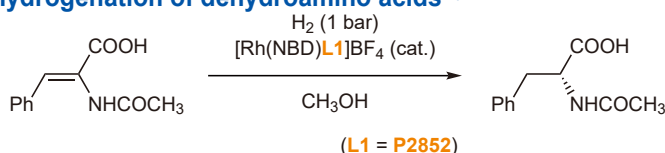
200mg  
[P2854]

## Advantages

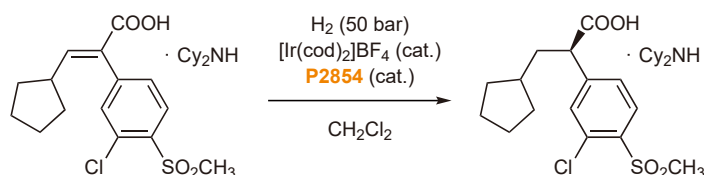
- Asymmetric phosphine ligands bearing flexible skeletons
- Possesses different reactivity and selectivity depending on the electron density and steric hindrance of the aryl groups

## Applications

### Asymmetric hydrogenation of dehydroamino acids <sup>1)</sup>



### Asymmetric hydrogenation of $\alpha$ -aryl- $\beta$ -alkylacrylate salts <sup>2)</sup>



References 1) I. Toth, B. E. Hanson, M. E. Davis, *Tetrahedron Asymmetry* **1990**, 1, 913. [https://doi.org/10.1016/S0957-4166\(00\)82282-X](https://doi.org/10.1016/S0957-4166(00)82282-X)  
2) S. Bachmann, A. Fettes, C. Lautz, M. Scalone, *Org. Process Res. Dev.* **2013**, 17, 1451. <https://doi.org/10.1021/op4002164>

These products are commercialized with the cooperation and help from SPERA PHARMA, Inc.

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