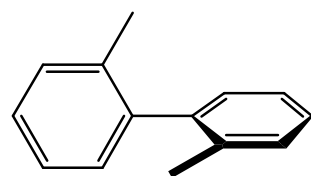


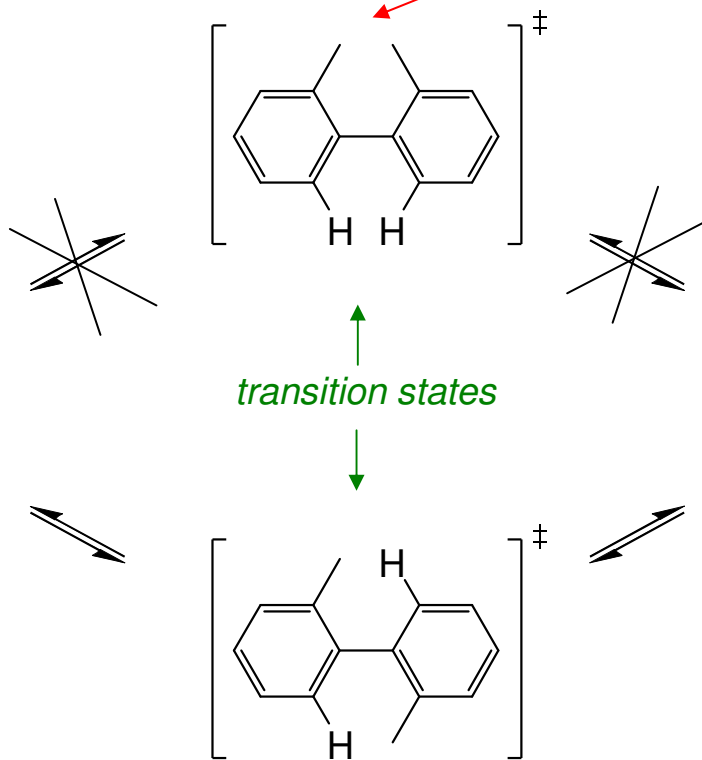
Allenes are rare, but another axially chiral unit is more common:

Biphenyls

Prefer twisted structure, especially with ortho substituents.



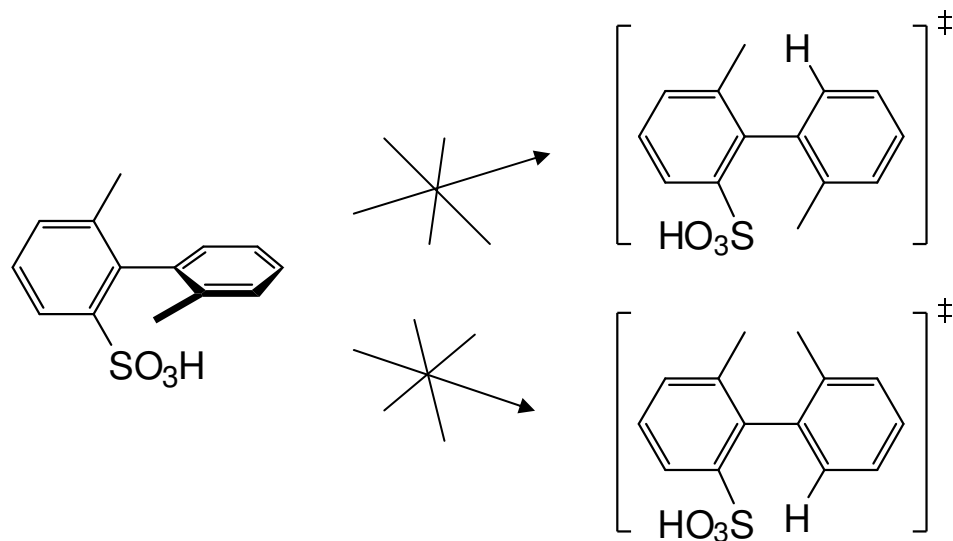
This example chiral.



One of the transition states is accessible, \therefore mirror-image forms can interconvert, \therefore no enantiomers

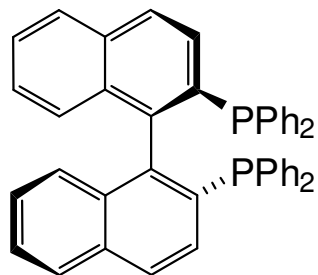
Note: transition state is achiral (planar) - accessible achiral conformation

But if all planar conformations are inaccessible, enantiomers will occur:



No planes of symmetry,
and planar conformations blocked

Also:



“BINAP”

V. important – chiral chelating ligand
for transition metal chemistry.