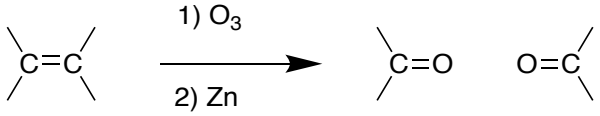
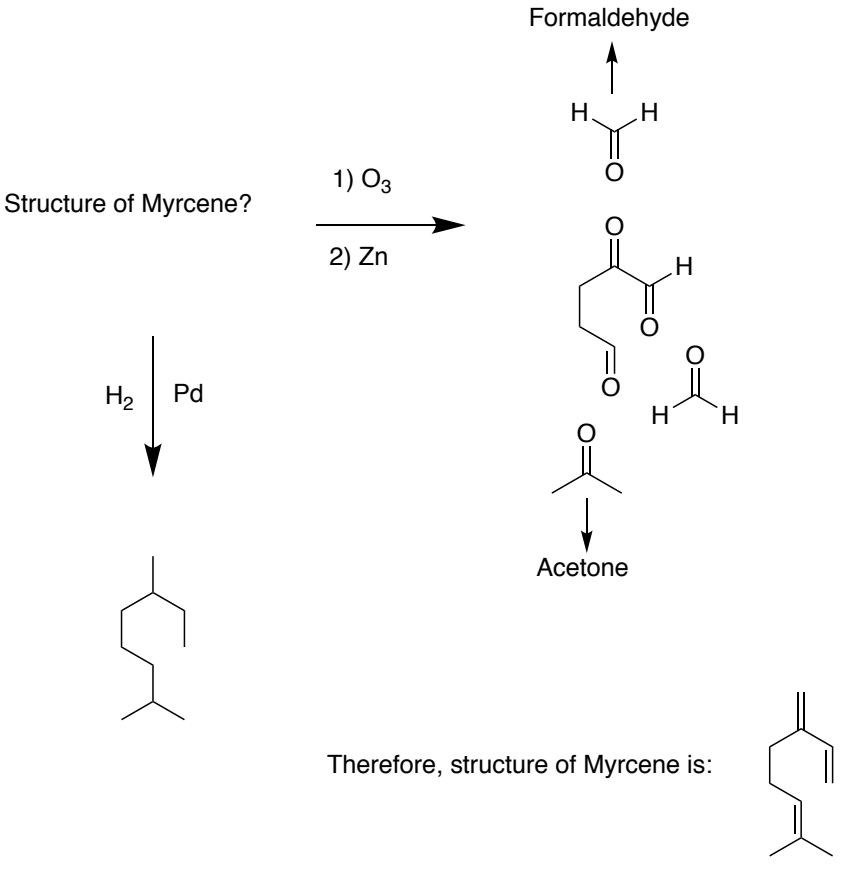
RECALL:

Ozonolysis:

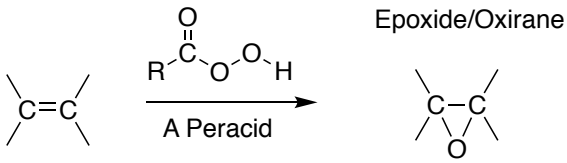


Example: Myrcene – $C_{10}H_{17}$



Therefore, structure of Myrcene is:

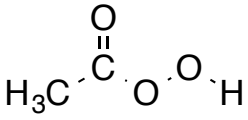
Epoxidation:



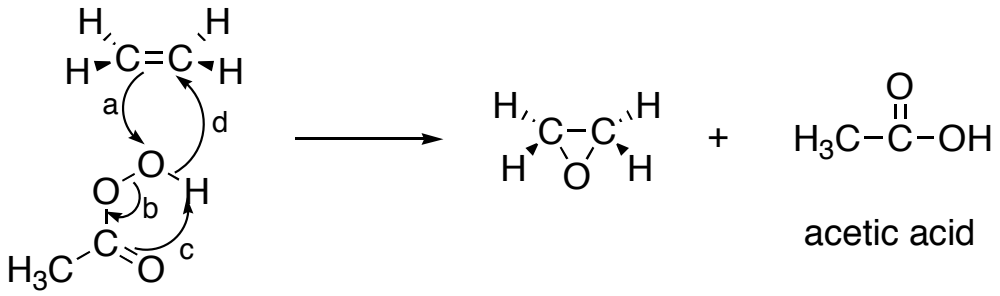
Epoxide/Oxirane

Syn/Cis Addition
Stereospecific

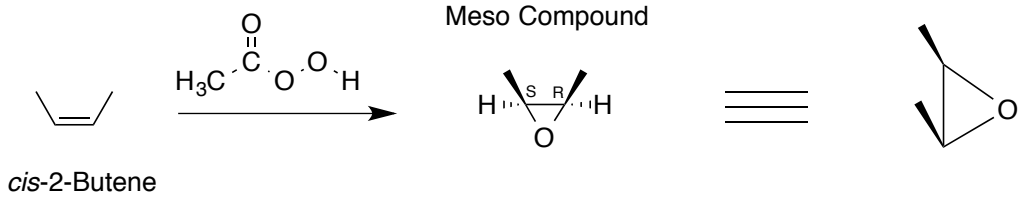
Example of a peracid

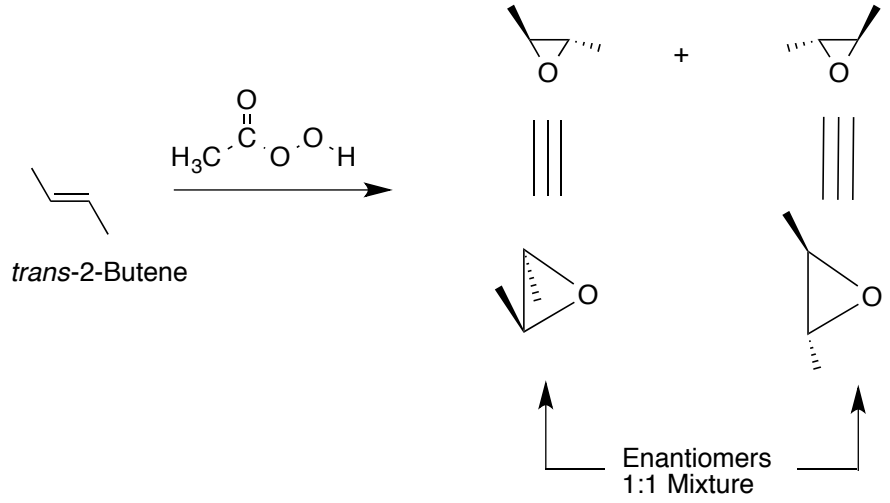


Mechanism:



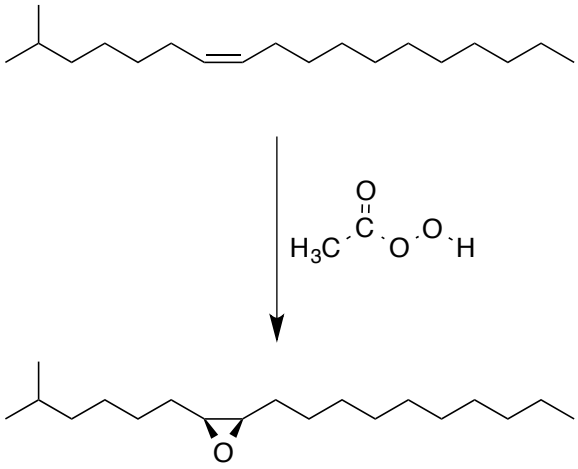
Example 1: *trans*- vs *cis*-Butene





The possibility of epoxidation from the top is 50% and from the bottom is 50% so a 1:1 mixture of enantiomers is form (racemic mixture).

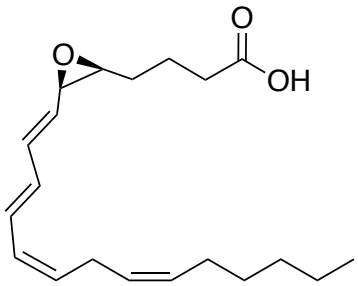
Example 2: 2-Methyl-7-octadecene



Sex pheromone for Gypsy Moth

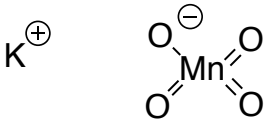
biologically, only one enantiomer is active (one shown) – racemate produced by peracetic acid

Example 3:



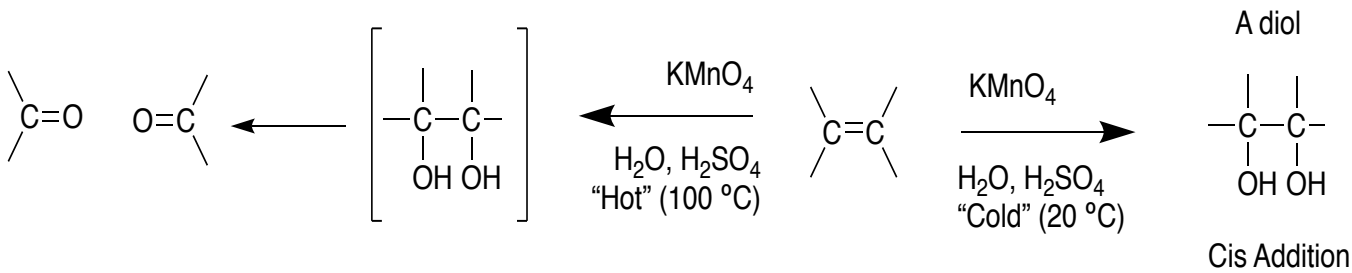
Leukotriene A_4

<u>Potassium Permanganate: $KMnO_4$</u>

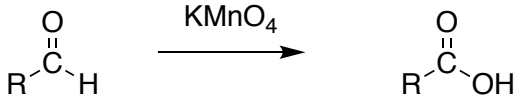


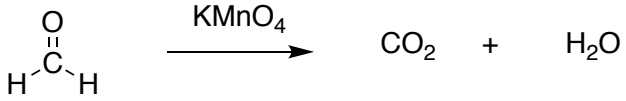
Purple crystals in H_2O and H_2SO_4

General Scheme:

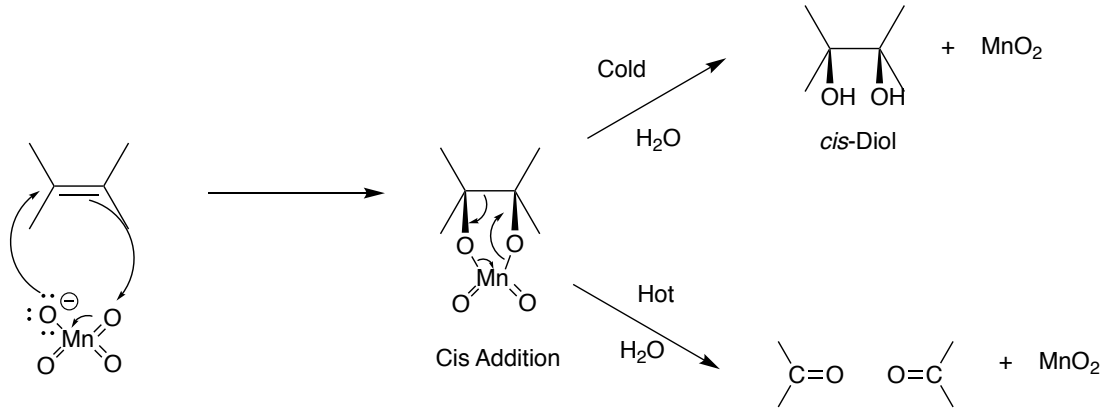


Reaction with aldehydes:

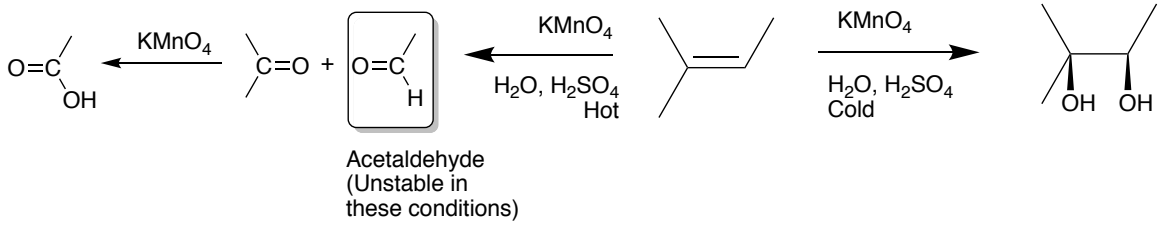




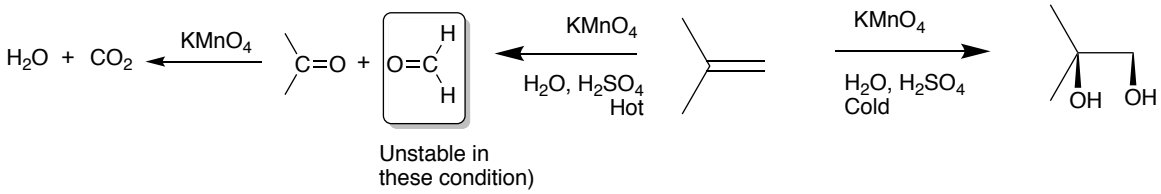
Mechanism:



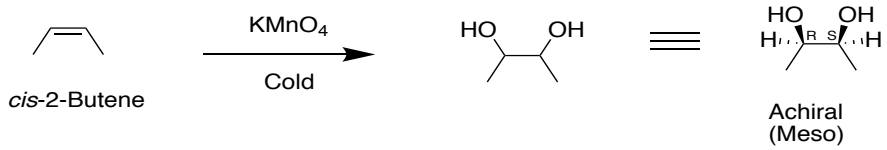
Example 1:

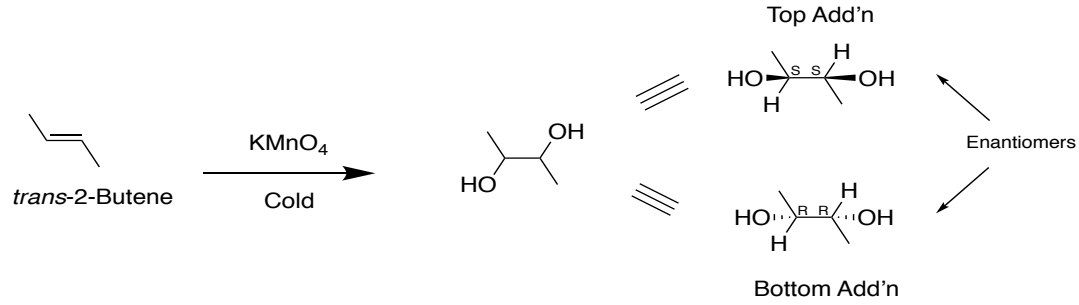


Example 2:

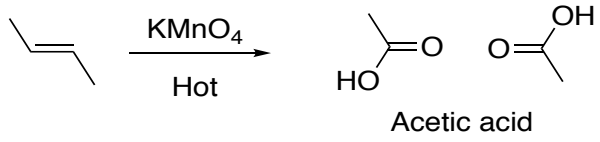


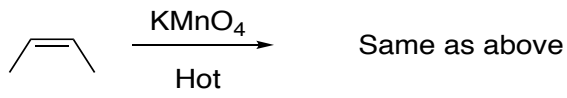
Example 3:



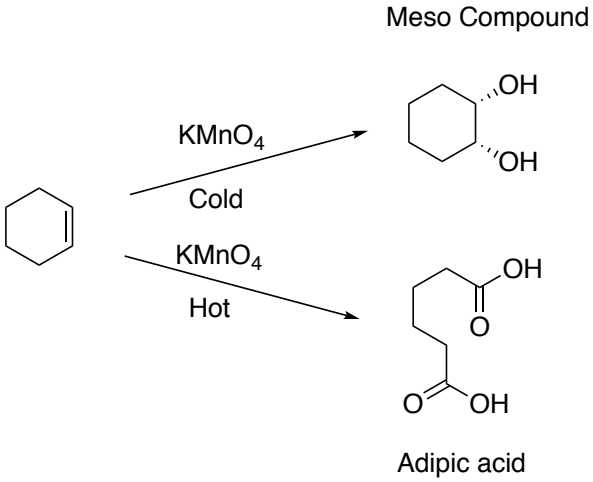


Example 4:

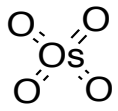




Example 5:

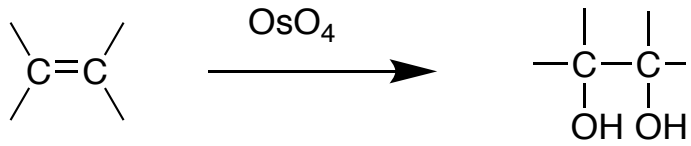


Osmium Tetraoxide: OsO_4



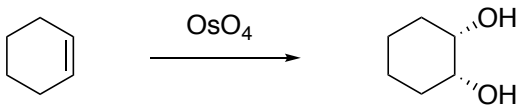
Toxic, Volatile

General Scheme:



Syn/Cis Addition

Example 1:



Halogenation of Alkynes:

Remember: