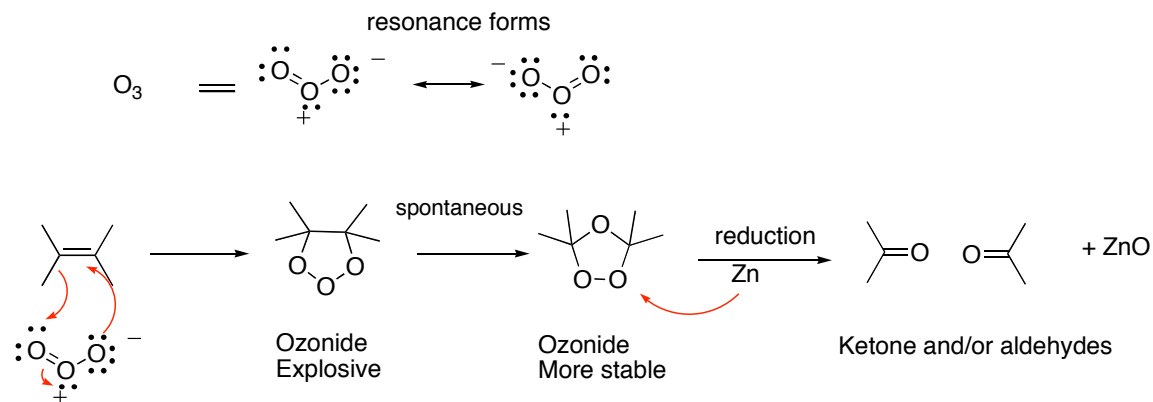
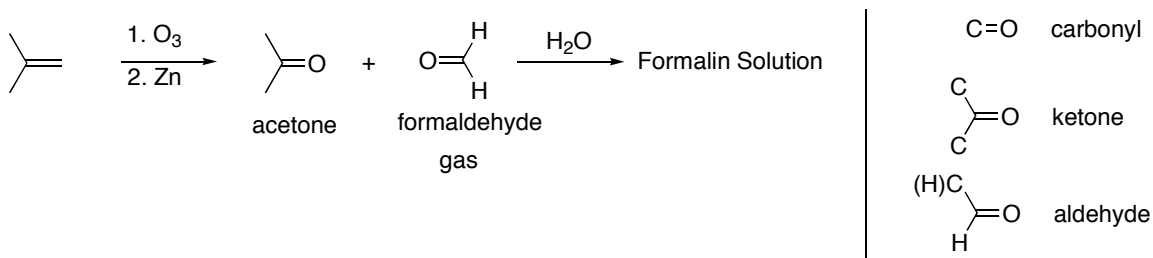


Ozonolysis: Cleavage of alkenes by ozone (O₃)

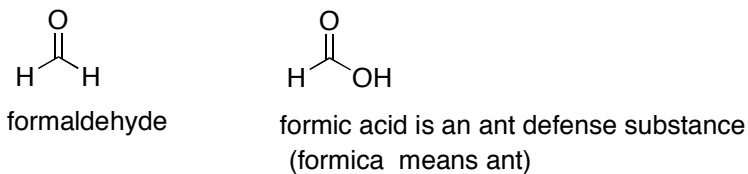
General reaction:



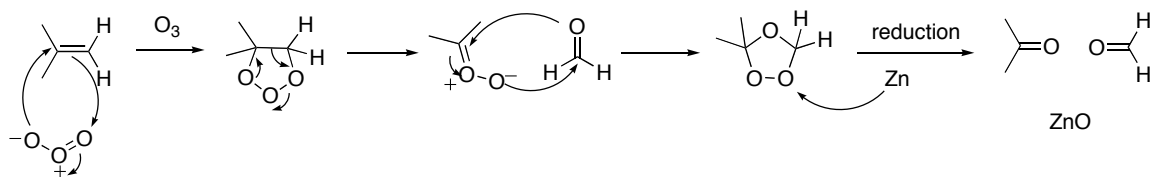
Eg.



➤ formaldehyde name comes from formic acid, which comes from formica (ant):

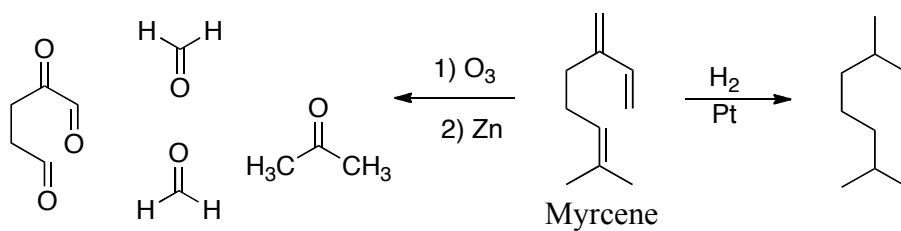
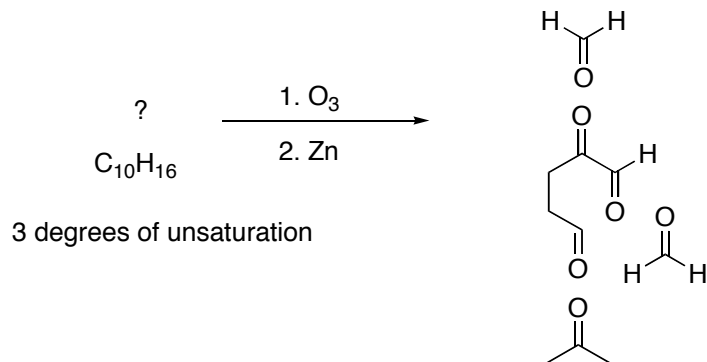


Mechanism:



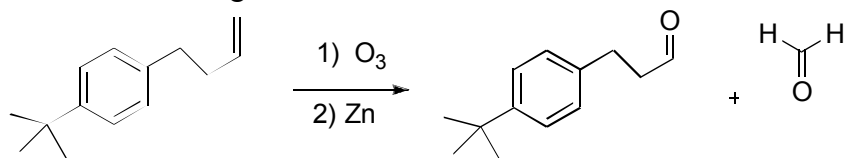
Sample question for practice: What is a possible structure for the starting material below ($C_{10}H_{16}$)?

Are there other isomers that will give the same products for ozonolysis followed by Zn treatment?



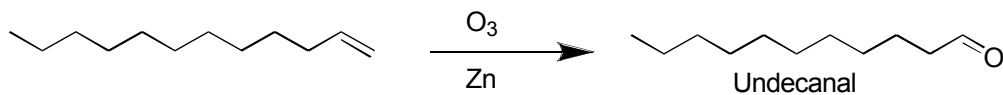
E.g.

Sperm chemo-attractant Bourgeonal:



Benzene ring is slow to react with ozone.

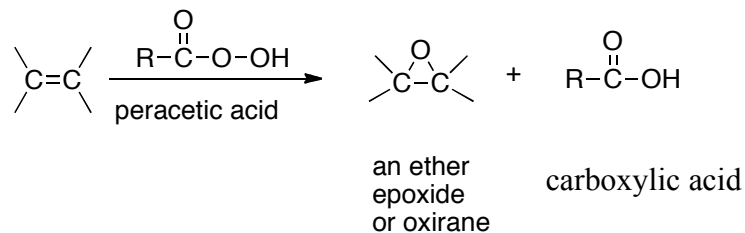
Undecanal however inhibits Bourgeonal's effects:



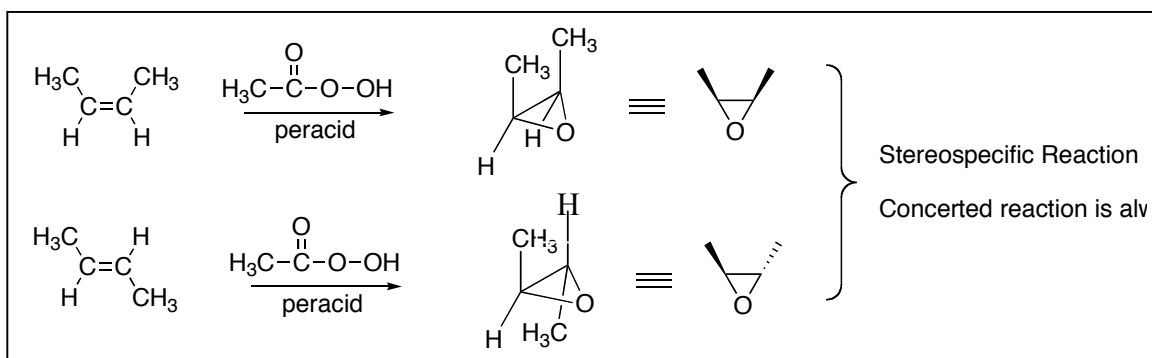
Epoxidation – Oxirane formation

1) Epoxide formation (epoxidation) – Oxirane formation

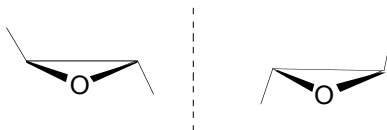
ex)



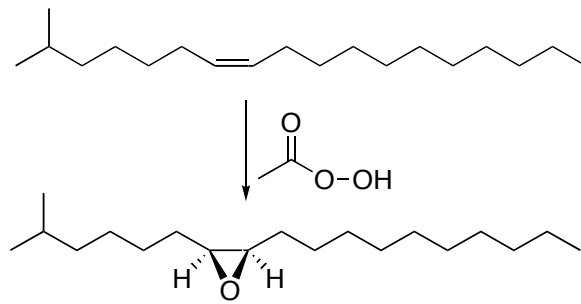
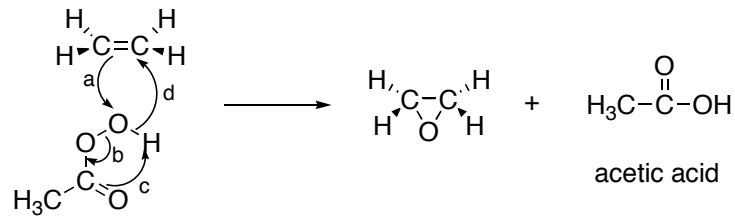
- Syn Addition
- Concerted reaction: all bonds break and form at the same time



Enantiomers:



Mechanism:

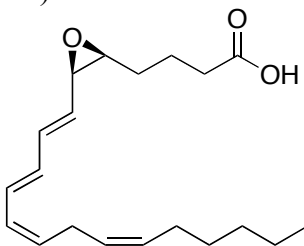


- Done by Adolf Butenandt

Gypsy moth sex pheromone

- Pheromones (pheroin horman – to carry excitement)
- Chemical messengers

Ex)

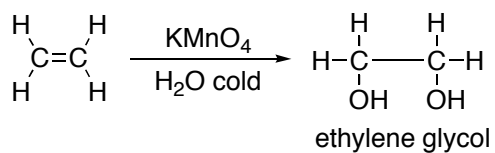
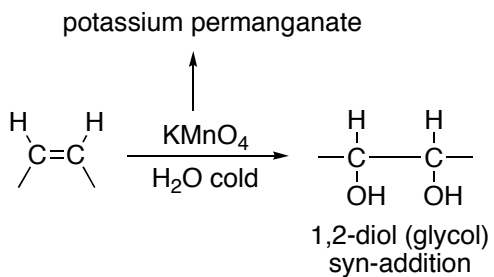


Leukotriene A4 -

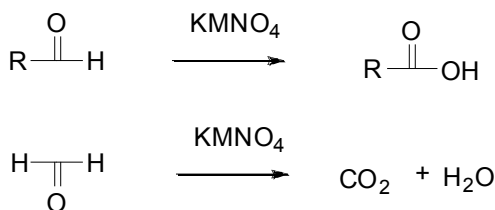
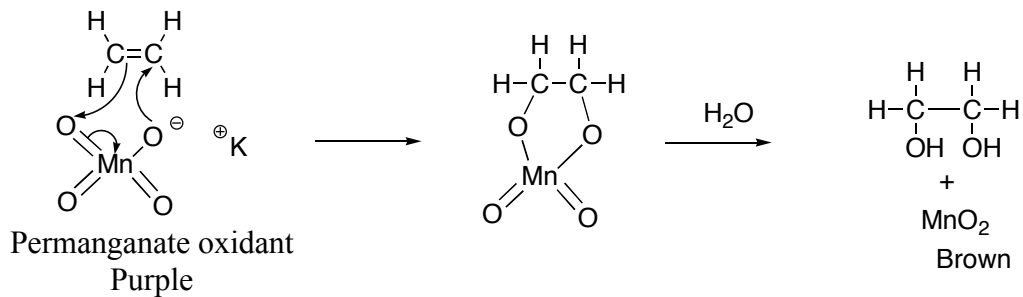
- substance (chemical messenger) that mediates anaphylaxis (allergic reaction, asthma)

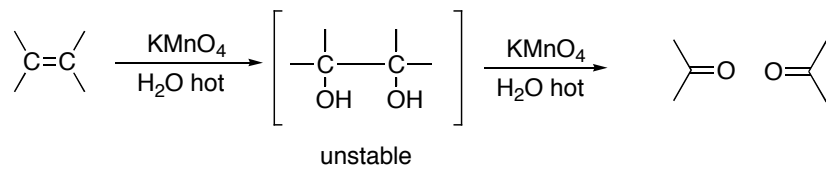
Dihydroxylation:

This is stereospecific reaction (syn addition).

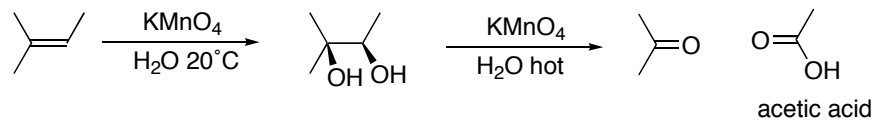


Mechanism

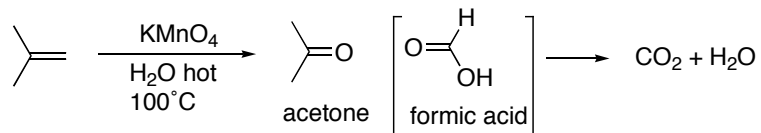




eg



eg



eg

