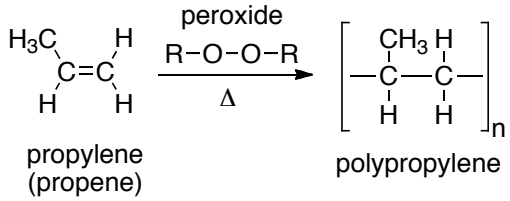
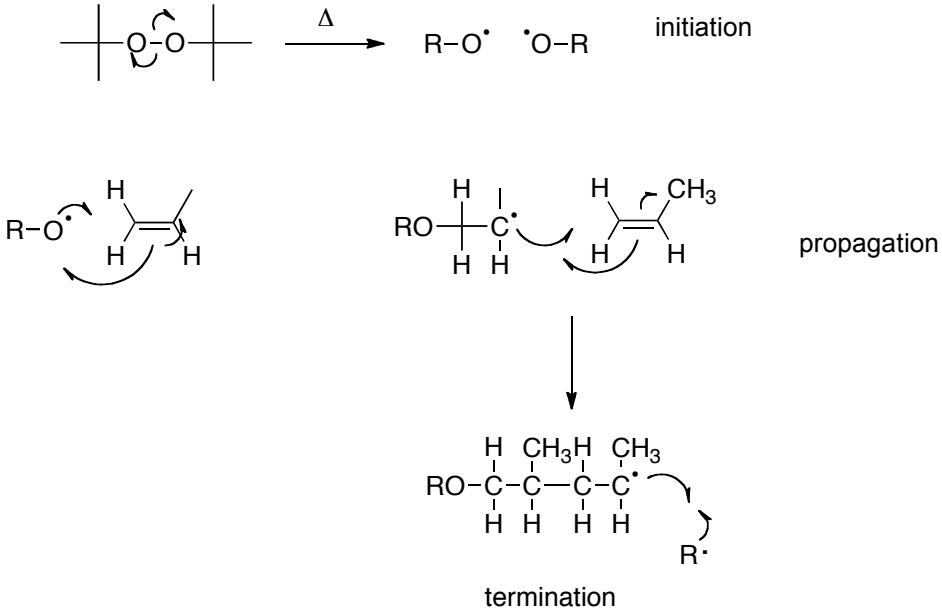
Polymerisation

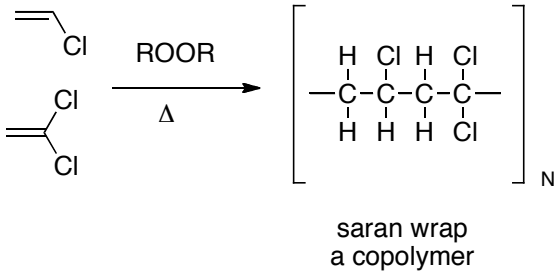
Eg. 1



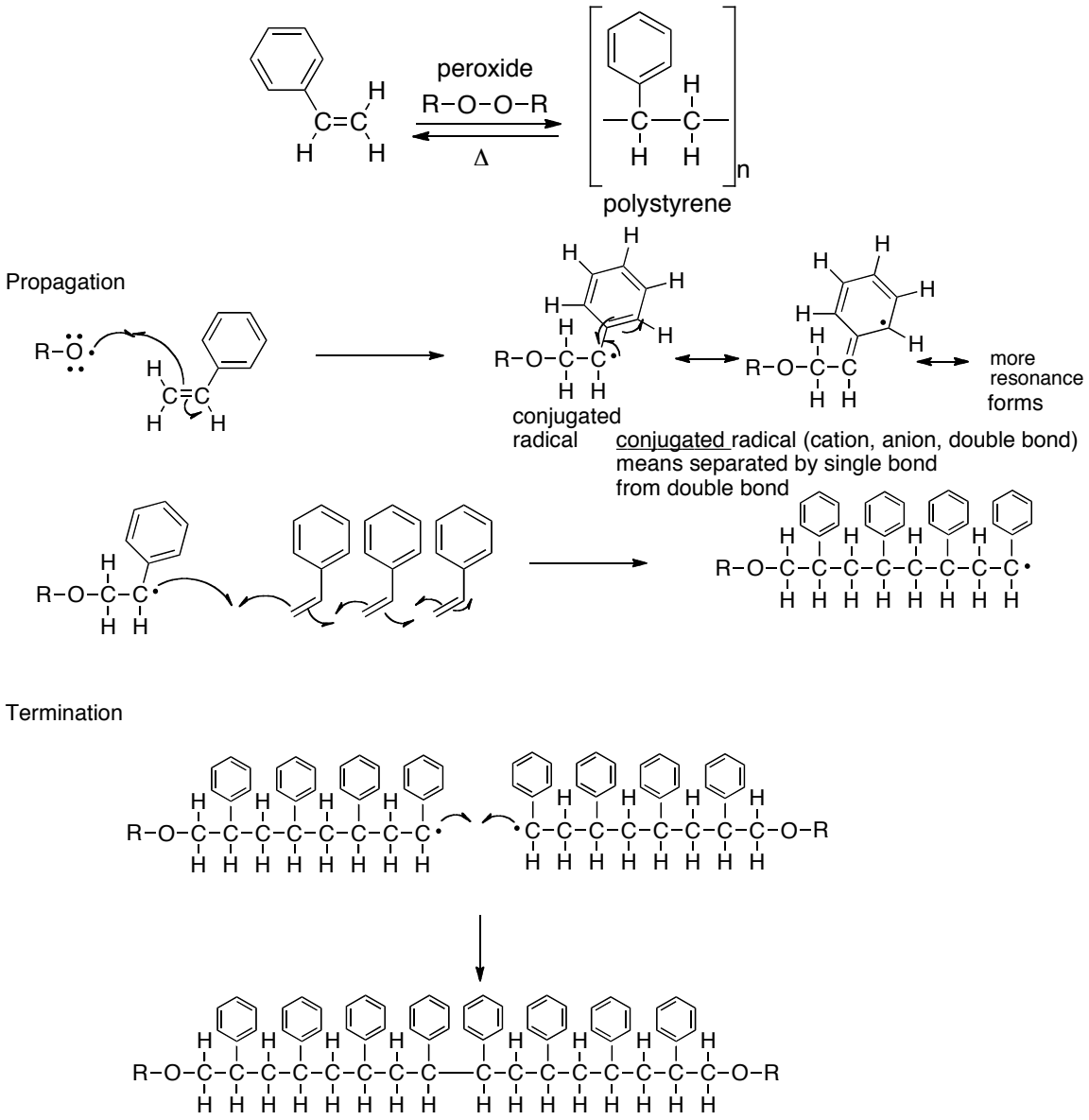
Eg. 2



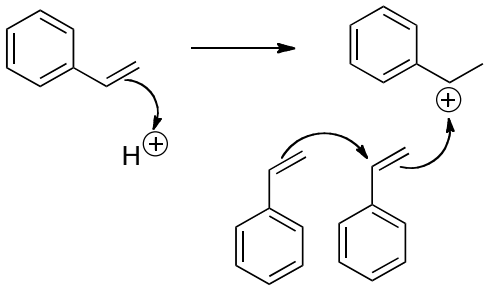
Eg. 3



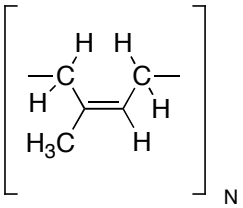
Eg. 4



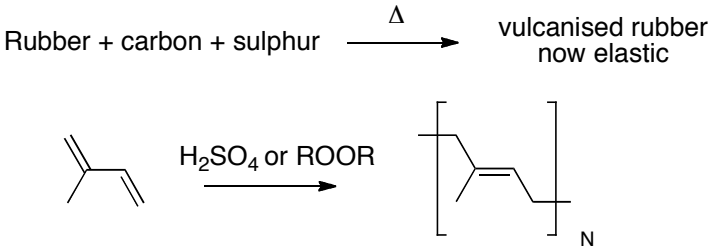
Or cationic acid catalysed mechanism:

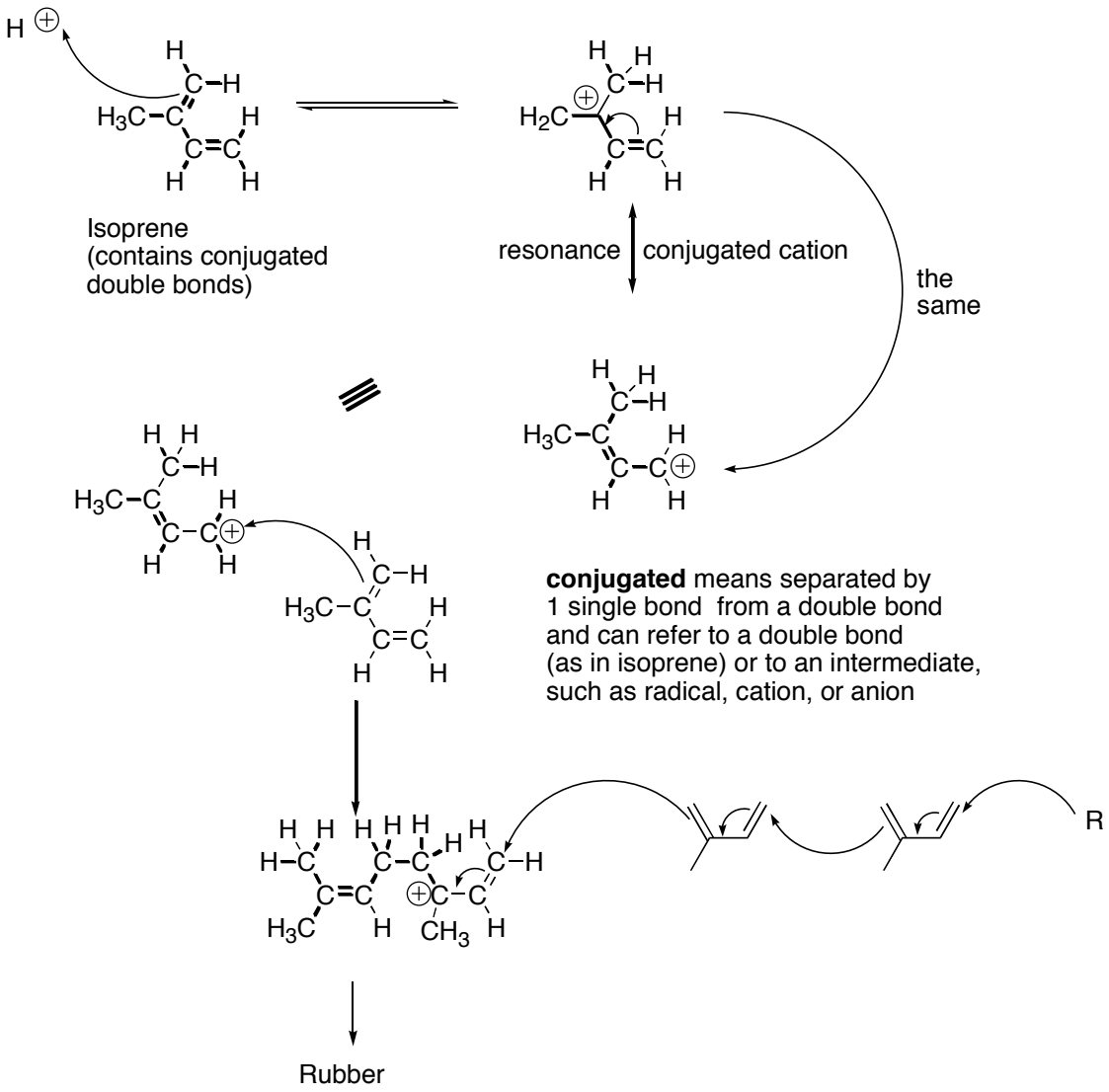


Another example:



Rubber
cis bond





Reactions of Alkynes

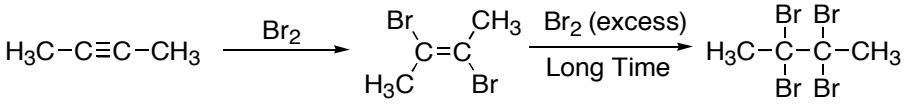
Reactions of alkynes

1. Addition (analogous to alkenes)
2. At terminal carbon bearing H

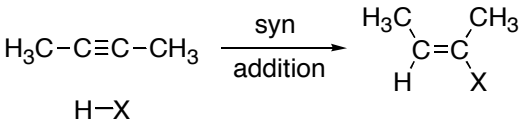
Addition

Halogenation

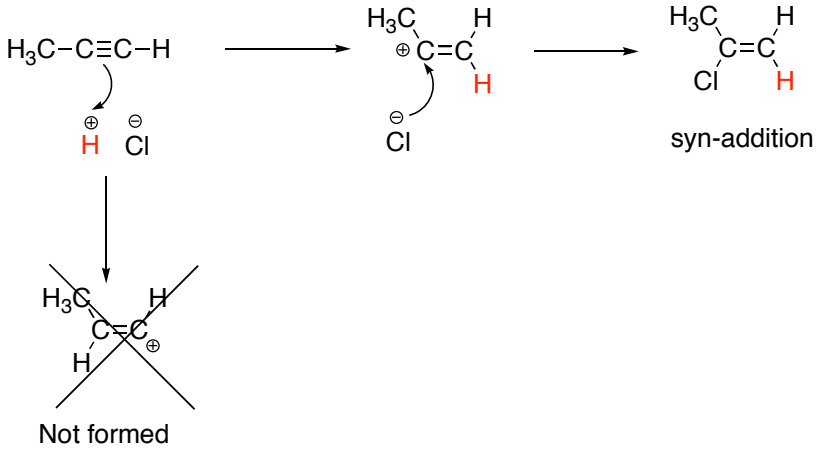
Eg.



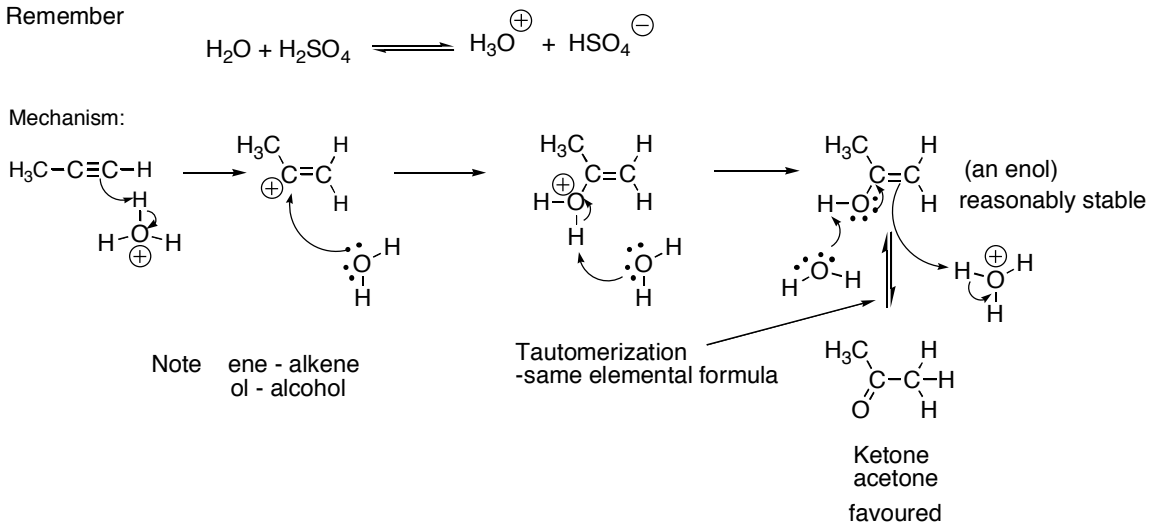
HX Addition (syn)



Eg. Propyne (follows markovnikov's rule)

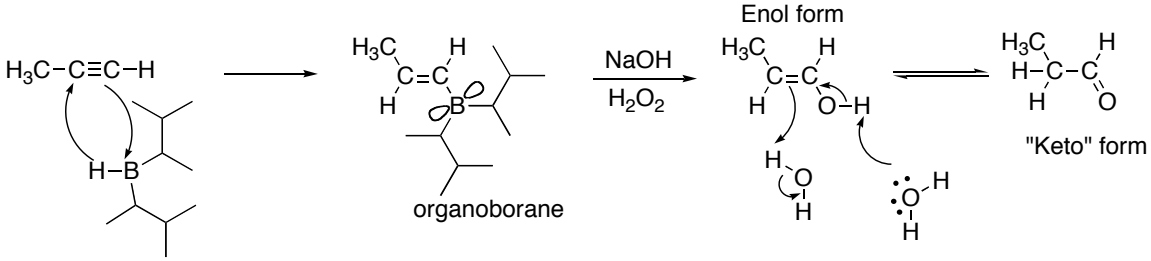


Addition of water (requires acid)

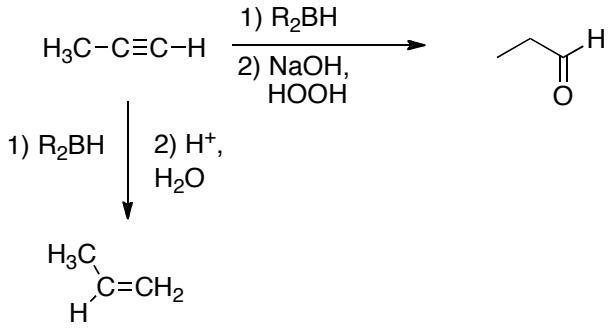


Tautomers (eg. keto/enol) are rapidly equilibrating structural isomers. The process is called **tautomerisation**.

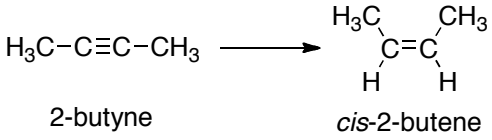
Anti-Markovnikov Water Addn – Hydroboration-Oxidation



Two possibilities for reaction of organoboranes:
water and acid to add H and give alkene or NaOH and H_2O_2 to give enol tautomer that converts (equilibrium) primarilty to keto tautomer (aldehyde shown below)



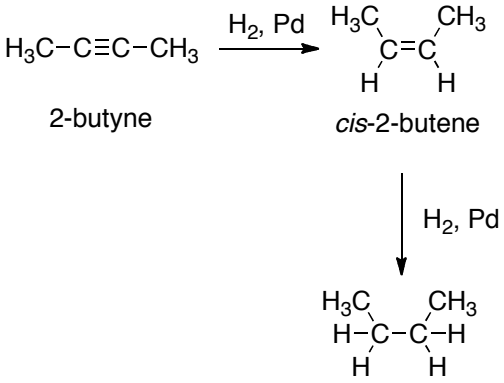
Hydrogenation



1. HBR_2 then $H^+ + H_2O$

OR

2. H_2 and catalyst. However, need a less reactive catalyst.



Lindlar's catalyst

Pd, $BaSO_4$ (or $CaCO_3$ is often used in place of $BaSO_4$), and quinoline (see below):