Rubber:

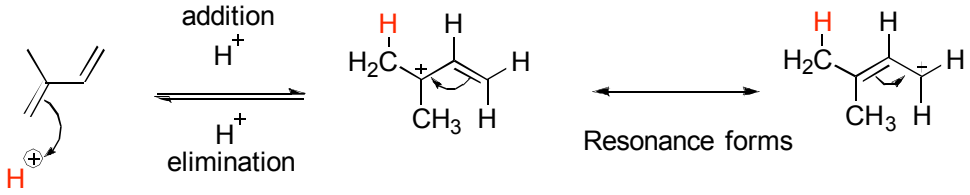
Rubber is polymer of Isoprene units

In nature it may be obtained from Dandelion plant; extracted white sap (latex) is used to prepare Latex and then rubber as a sticky gum (100 lbs/acre).

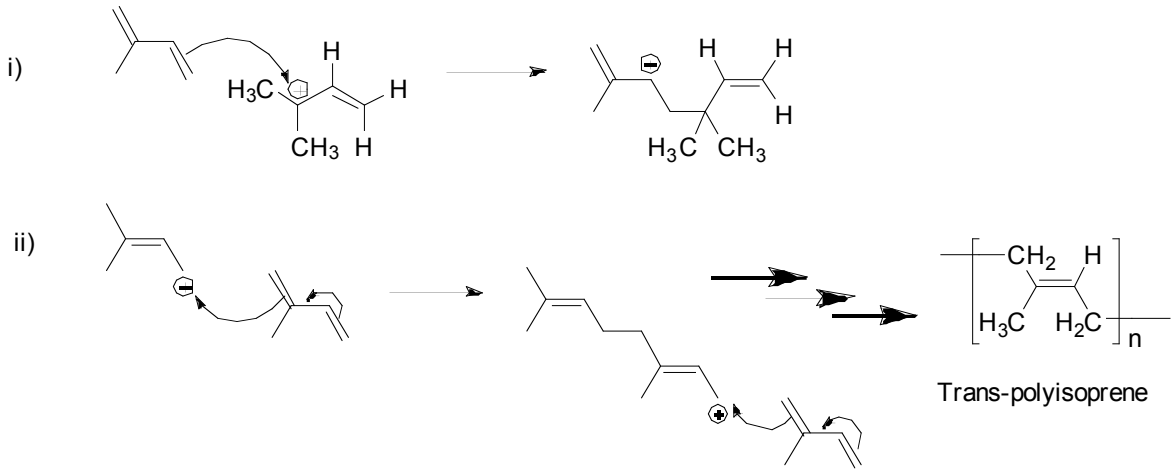
Rubber tree: *Hevea brasiliensis* (~ 2500 lb rubber/acre).

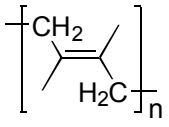
Making Rubber (polymerization):

Conjugated Carbocation: positive charge is separated by single bond from double bond (increases stability of the cation).

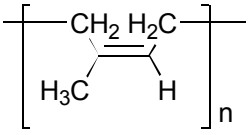


Different possibilities for polymerization, however the trans form is the favored pathway:



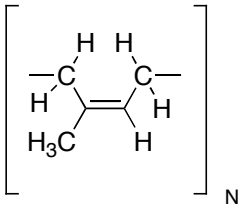


Trans-Polyisoprene
Chewing gum



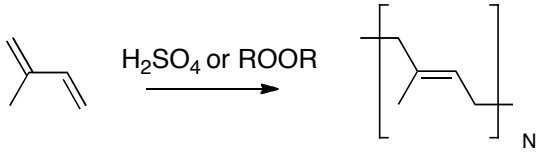
Cis-Polyisoprene
Natural Rubber

Another depiction of the same process



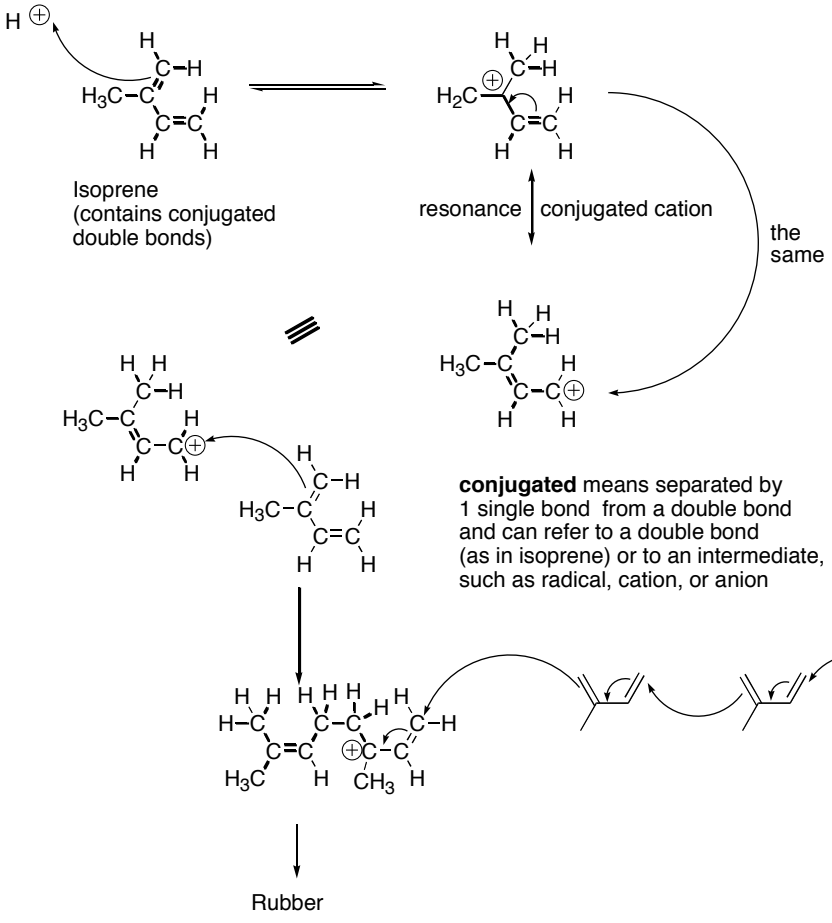
Rubber
cis bond

Rubber + carbon + sulphur $\xrightarrow{\Delta}$ vulcanised rubber now elastic

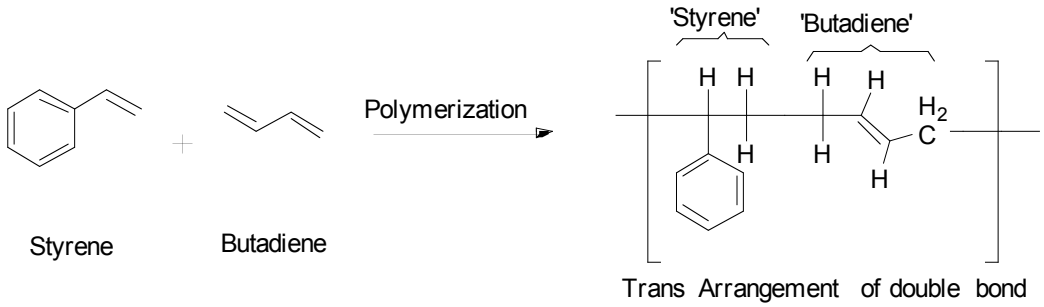


2-methyl-1,3-butadiene

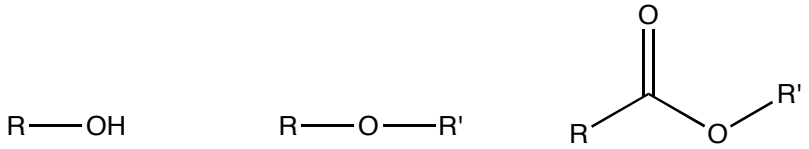
chewing gum
trans bond



Styrene-Butadiene (SBR)



Lecture Outline & Assignment 5 **Alcohols and Ethers**



alcohol ether ester

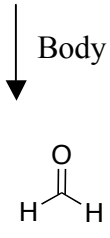
Alcohol Nomenclature

Rules:

Find the longest chain with the OH and
Number from end to give –OH the lowest number.
Drop "e" of alkane, and add "ol"

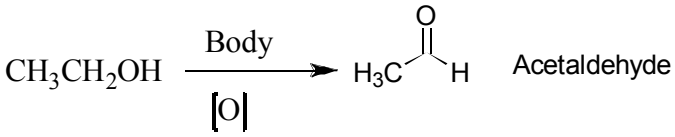
Examples:

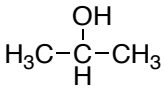
CH_3OH - methanol (wood alcohol, or methyl alcohol)
Toxic

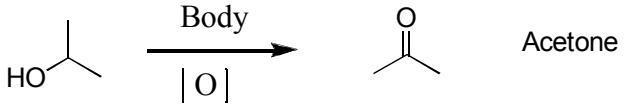


formaldehyde

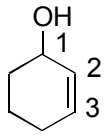
- CH_3CH_2OH - ethanol (grain alcohol or ethyl alcohol)



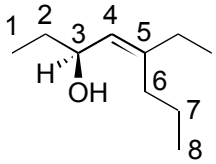
- $CH_3CH_2CH_2OH$ - propanol (propan-1-ol, n-propanol, or n-propyl alcohol)
-  - 2-propanol (iso-propyl alcohol), rubbing alcohol



Examples of naming convention:



2-Cyclohexen-1-ol
Or Cyclohex-2-en-1-ol



3-(S)-5-ethyl-4(Z)-octen-3-ol