

Today

Practice Alkene Nomenclature (5.2)

Sections 5.3, 5.5

Alkene nomenclature and structure, and how alkenes react

Next Class

Sections 5.5 - 5.13

How alkenes react

Kinetics, thermodynamics, reaction coordinate diagrams, and catalysis

Alkene Nomenclature

Same rules as alkanes and alcohols...

ane \Rightarrow ol

ane \Rightarrow ene

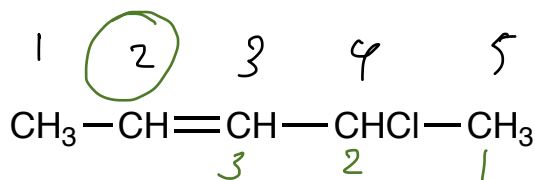
alkenes are a functional group,

the parent hydrocarbon must completely contain the double bond

the position of the double bond gets the lowest possible number

the "ane" ending of parent hydrocarbon is changed to "ene"

substituents are names as before...



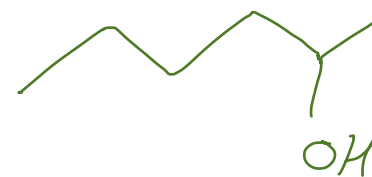
~~pentane~~ ene

4-chloro-2-pentene

or

4-chloropent-2-ene

hexan-2-ol
~~2-hexanol~~

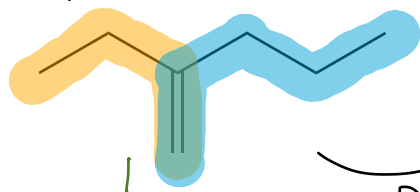


substituents

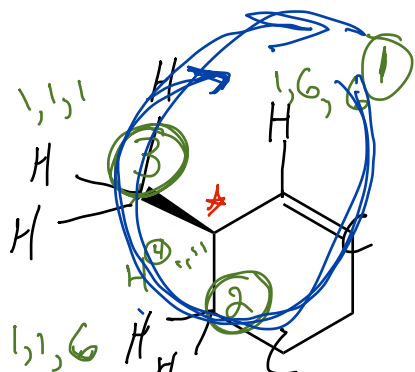
~~chlorine~~ o

Practice

2 C atoms ... ethane is alkane with 2 C atoms



pentene
2-ethyl-1-pentene

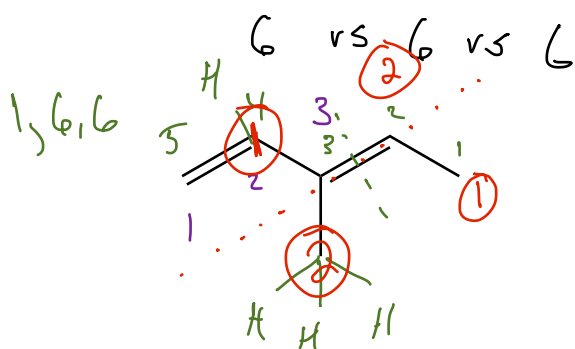


(R)-3-methyl-1-cyclohexene

H, CH₃, CH₂ ..., CH=...

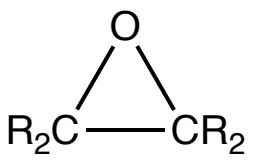
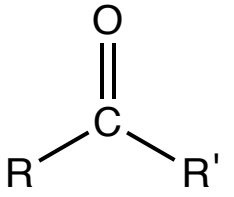
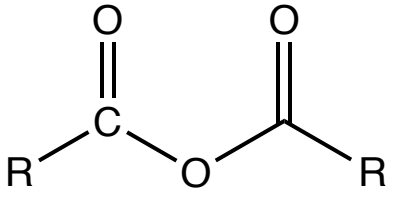
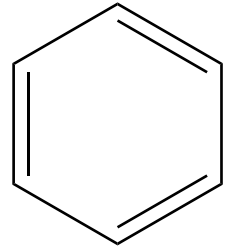
hexane

1. Find longest C chain that contains the functional group
2. Change are \Rightarrow ene and find the position #
3. Name substituents
4. Find # for substituents
5. Stereoisomers?
No Z, E or R, S



(E)-3-methyl-1,3-pentadiene

pentane
pentene
:

Group I	Group II	Group III	Group IV
$\text{R}_2\text{C}=\text{CR}_2$ alkenes $\text{R}-\text{C}\equiv\text{C}-\text{R}$ alkynes	$\text{R}_3\text{C}-\text{X}$ $\text{X} = \text{Cl, Br, I}$ Alkyl Halides $\text{R}_3\text{C}-\text{OH}$ alcohols $\text{R}_3\text{C}-\text{O}-\text{CR}_3$ ethers  epoxides and more...	 ketones ($\text{R, R}' \neq \text{H}$) and aldehydes (R or $\text{R}' = \text{H}$) $\text{RC}(=\text{O})\text{NR}_2$ amides $\text{RC}(=\text{O})\text{OR}$ esters ($\text{R} \neq \text{H}$) $\text{RC}(=\text{O})\text{OH}$ carboxylic acids  anhydrides $\text{RC}(=\text{O})\text{Cl}$ acid chlorides	 aromatics and more...