

Organic Nomenclature

Organic Compounds

- **Organic Compounds** - any covalently bonded compound containing carbon (except _____ and _____)

Hydrocarbons

- _____ - Organic compounds that contain only carbon & hydrogen
- _____ - contain only single covalent bonds
- _____ - contain one or more carbon - carbon double bond
- _____ - contain one or more carbon-carbon triple bond

Saturated & Unsaturated Hydrocarbons

- _____ hydrocarbons – contain only single carbon-carbon bonds (alkanes)
- _____ hydrocarbons – contain double carbon-carbon bonds (alkenes) or triple carbon-carbon (alkynes) bonds

Formulas

- Alkanes = C_nH_{2n+2}
- Alkenes = C_nH_{2n}
- Alkynes = C_nH_{2n-2}

Nomenclature

- Must memorize prefixes
- To name, look at the formula for the hydrocarbon
- Determine if it is an alkane, alkene, or alkyne
- Use the prefix for the number of carbons
- Add ending (ane, ene, yne)

Prefix	# of carbon atoms
Meth-	1
Eth-	2
Prop-	3
But-	4
Pent-	5
Hex-	6
Hept-	7
Oct-	8
Non-	9
Dec-	10

Example

- Name C_3H_8

Example

- What is the formula for octene?

Example

- Name C_5H_{12}

Functional Groups

Class	Functional group
Alcohol	$R - OH$
Ether	$R - O - R'$
Aldehyde	$\begin{array}{c} O \\ \\ R - C - H \end{array}$
Ketone	$\begin{array}{c} O \\ \\ R - C - R' \end{array}$
Carboxylic acid	$\begin{array}{c} O \\ \\ - C - OH \end{array}$
Ester	$\begin{array}{c} O \\ \\ R - C - O - R' \end{array}$
Amine	$\begin{array}{c} R' \\ \\ R - N - R'' \end{array}$