

Ch 25

HW: Sec Rev 7,9,10,28,29

Sec 25.1

obj: Characterize hydrocarbons and recognize different structural formulas for a hydrocarbon.

Organic Chemistry

- The study of Carbon & the compounds it makes.

* CO & CO₂ not organic.

- Carbon has 4 valence electrons

* It can form 4 covalent bonds

* It can form 2 double covalent bonds

* It can form 1 triple covalent bond

- Carbon forms chains w/ other Carbon atoms.

- Carbon will bond w/ Halogens, Hydrogen and groups of atoms.

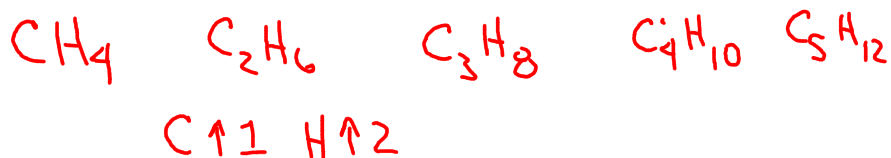
- The structure of the compound will determine the properties of the compound. (Isomers)

Hydrocarbons

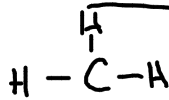
- Compounds w/ Carbon + Hydrogen.
- 3 families of Hydrocarbons

1) Alkanes

- There are only single bonds btw carbon atoms.
- Every carbon atom has four single bonds surrounding it.
- Continuous Chained Hydrocarbons (Homologous Series)

Chemical FormulaStructural Formula

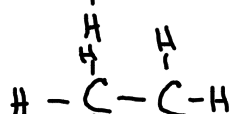
CH_4 - methane



C

 CH_4

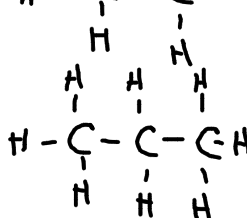
C_2H_6 - ethane



C-C

 CH_3-CH_3

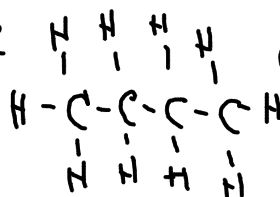
C_3H_8 - propane



C-C-C

 $\text{CH}_3-\text{CH}_2-\text{CH}_3$

C_4H_{10} - butane



C-C-C-C

 $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$ $\text{CH}_3(\text{CH}_2)_2\text{CH}_3$

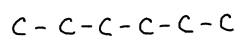
Naming Alkanes

- Depends on the number of carbon in the chain.
- * Indicated by a prefix.

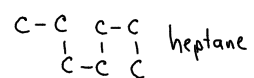
Prefixes

1-C → Meth	2-C → Eth
3-C → prop	4-C → but
5-C → pent	6-C → Hex
7-C → hept	8-C → Oct
9-C → non	10-C → dec

- The suffix is always ane



hexane

Pentane