

**Molecular Compounds** ( \_\_\_\_\_ bonding)

Formula represents the number of \_\_\_\_\_ of each \_\_\_\_\_ in a single \_\_\_\_\_.

**Prefix System of Nomenclature**

Prefix	Number

Prefix	Number

examples: dinitrogen monoxide \_\_\_\_\_  
 tetraphosphorus decoxide \_\_\_\_\_  
 carbon dioxide \_\_\_\_\_; carbon monoxide \_\_\_\_\_

**Organic Compounds**

any \_\_\_\_\_ bonded compound containing \_\_\_\_\_, with the exception of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_

**Hydrocarbons** Composed of only \_\_\_\_\_ and \_\_\_\_\_.

- Saturated contain only \_\_\_\_\_ bonds (\_\_\_\_\_)
- Unsaturated contain \_\_\_\_\_ (\_\_\_\_\_) and \_\_\_\_\_ (\_\_\_\_\_) carbon-carbon bonds very \_\_\_\_\_ because of \_\_\_\_\_ and \_\_\_\_\_ bonds.

### Organic Nomenclature

Prefix	# of carbon atoms (n)

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formulas: Alkane =  $C_nH_{2n+2}$

Alkenes =  $C_nH_{2n}$

examples: propane \_\_\_\_\_ nonane \_\_\_\_\_

butene \_\_\_\_\_

### The Chemistry Quiz

CR1. \_\_\_\_\_

CR2. \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

In these compounds, which are formed between (metals, nonmetals, metals and nonmetals), the atoms bond together to form (molecules, ions). In molecular compounds, \_\_\_\_\_ are used to show the number of atoms of each element per molecule. Finish the chart below, listing the prefixes and the number of atoms each represents:

Prefix	mono-							octa-		
# of atoms			3			6				

Write the formula of these molecular compounds:

carbon tetrachloride \_\_\_\_\_ sulfur trioxide \_\_\_\_\_

dinitrogen monoxide \_\_\_\_\_ dinitrogen trioxide \_\_\_\_\_

dinitrogen pentoxide \_\_\_\_\_ silicon dioxide \_\_\_\_\_

phosphorus trichloride \_\_\_\_\_ carbon disulfide \_\_\_\_\_

tetraphosphorus decoxide \_\_\_\_\_ carbon monoxide \_\_\_\_\_

### Organic Compounds—A Special Case of Molecular Compounds

Organic compounds are now defined as compounds that contain the element \_\_\_\_\_. The nature of the \_\_\_\_\_ between each pair of carbon atoms in an organic compound will determine whether the compound is saturated or unsaturated. The bonds between the carbon atoms in a(n) \_\_\_\_\_ compound are single bonds, but in a(n) \_\_\_\_\_ compound, the bonds between neighboring carbon atoms are \_\_\_\_\_ or \_\_\_\_\_ bonds. The organic compounds containing only hydrogen and

carbon are called \_\_\_\_\_.  $C_nH_{2n+2}$  is the general form for the \_\_\_\_\_ series of hydrocarbons. The names of this series are composed of a \_\_\_\_\_, which denotes the number of carbon atoms present, and the suffix \_\_\_\_\_. This series of hydrocarbons has only single bonds, and so, is said to be \_\_\_\_\_.  $C_nH_{2n}$  is the general form for the class of hydrocarbons referred to as the \_\_\_\_\_. Each member of this series has a pair of carbon atoms connected by a \_\_\_\_\_ bond, and so, is said to be \_\_\_\_\_. Again, \_\_\_\_\_ are used to denote the number of carbon atoms present in the molecule, and all members of this series end in the suffix \_\_\_\_\_.

Finish the chart below, filling in the missing prefixes and the number of carbon atoms each represents:

Prefix		eth-								dec-
# of Carbon Atoms	1				5					

What is the formula for the following hydrocarbons?

butene \_\_\_\_\_

propane \_\_\_\_\_

methane \_\_\_\_\_

hexane \_\_\_\_\_

nonene \_\_\_\_\_

ethene \_\_\_\_\_