Naming Molecular Compounds

Chem Worksheet 9-2

Name _____

A **molecular compound** is a group of atoms held together by a covalent bond. Compounds made entirely of non-metals are generally molecular compounds. Carbon tetrachloride, CCl_4, is an example of a molecular compound. When naming these compounds prefixes are used to denote how many of each atom is bonded in the compound. However, the prefix *mono-* is not used with the first element in the compound, even if there is only one element. The ending of the second element in the compound is always changed to *–ide*, in the same way the ending is changed for monatomic anions.

Rules for naming Molecular Compounds

1. Name the first element using the element's full name.
2. Name the second element using the *–ide* ending.
3. Use prefixes to tell how many of each element is present. (do not use the prefix *mono-* on the first element).

Naming Prefixes	
1	mono-
2	di-
3	tri-
4	tetra-
5	penta-
6	hexa-
7	hepta-
8	octa-
9	nona-
10	deca-

Examples

#1. Write the chemical formula for diphosphorus pentoxide

- this compound contains two phosphorus atoms and five oxygen atoms: **P_2O_5**

#2. Name the following compound: IF_7.

- there is <u>one</u> iodine and there are <u>seven</u> fluorine atoms: **iodine heptafluoride**

(the prefix *mono-* is not used on the first element and that the ending of fluorine is changed to *–ide*.)

Fill in the following table with the missing information.

	Formula	Name
1.	SO_2	
2.		Sulfur trioxide
3.	N_2O_4	
4.		Chlorine dioxide
5.	P_4O_{10}	
6.		Carbon disulfide
7.	NO_2	
8.	N_2Cl_4	
9.		Xenon difluoride
10.	S_2Cl_2	
11.		Iodine trichloride
12.	P_2S_5	

	Formula	Name
13.	SF_6	
14.		Tetraphosphorus hexasulfide
15.	SeO_2	
16.		Ammonia
17.		Boron trichloride
18.	N_2O	
19.	BrF_5	
20.		Carbon dioxide
21.		Carbon monoxide
22.	ClF_3	
23.		Iodine monochloride
24.	CH_4	