Covalent Nomenclature

Every Covalent Molecule is named one of two ways:

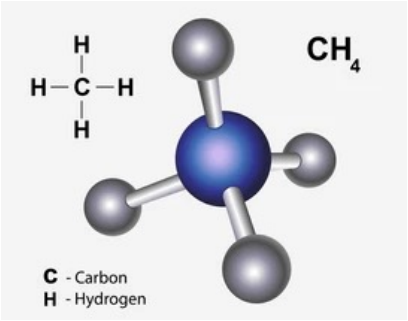
1. Prefixes: Binary Covalent
2. Organic: Larger Molecules (*by type*)

Covalent Molecules can come in many formula variations based on structure

Formulas for Example Carbon Molecules

CH_4	C_2H_6	C_2H_4	C_2H_2
C_3H_8	C_3H_6	C_3H_4	C_4H_{10}
C_4H_8	C_4H_6	C_4H_4	C_5H_{12}

Some molecules have multiple names



Binary: Carbon Tetrahydride
Organic: Methane

2

Binary Covalent Nomenclature

Covalent Molecules are named based on the *prefix* model. The *prefix* is a number before each atom in a binary covalent molecule

Prefix (*no mono*-) First Element
Prefix Second Element (-ide)

Binary Molecule Examples

CH_4: Carbon Tetrahydride
S_2O_2: Disulfur Dioxide
NCl_3: Nitrogen Trichloride

Covalent Molecule Prefixes

Number Atoms	Prefix	Number Atoms	Prefix
1	mono	6	hexa
2	di	7	hepta
3	tri	8	octa
4	tetra	9	nona
5	penta	10	deca

3

Binary Covalent Nomenclature

CH_4 1 C and 4 H

carbon tetra hydride

(no mono)

S_2O_3 2 S and 3 O

di sulfur tri oxide

1: mono
2: di
3: tri
4: tetra
5: penta
6: hexa
7: septa
8: octa

4

Binary Covalent Nomenclature

tri (3) carbon (C) hexa (6) chloride (Cl)

C _ Cl _ → C_3Cl_6

(1) nitrogen (N) di (2) oxide (O)

N _ O _ → N_xO_2 → NO_2

1: mono
2: di
3: tri
4: tetra
5: penta
6: hexa
7: septa
8: octa

5