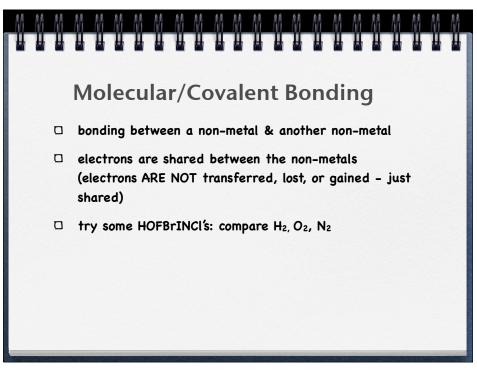
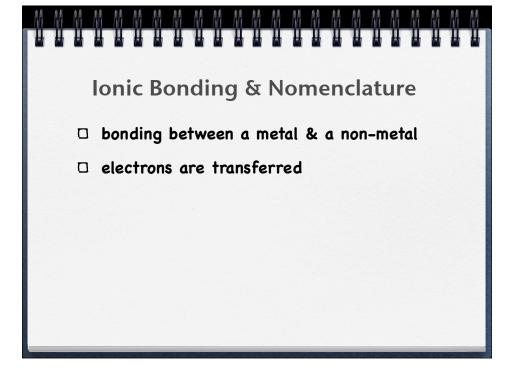
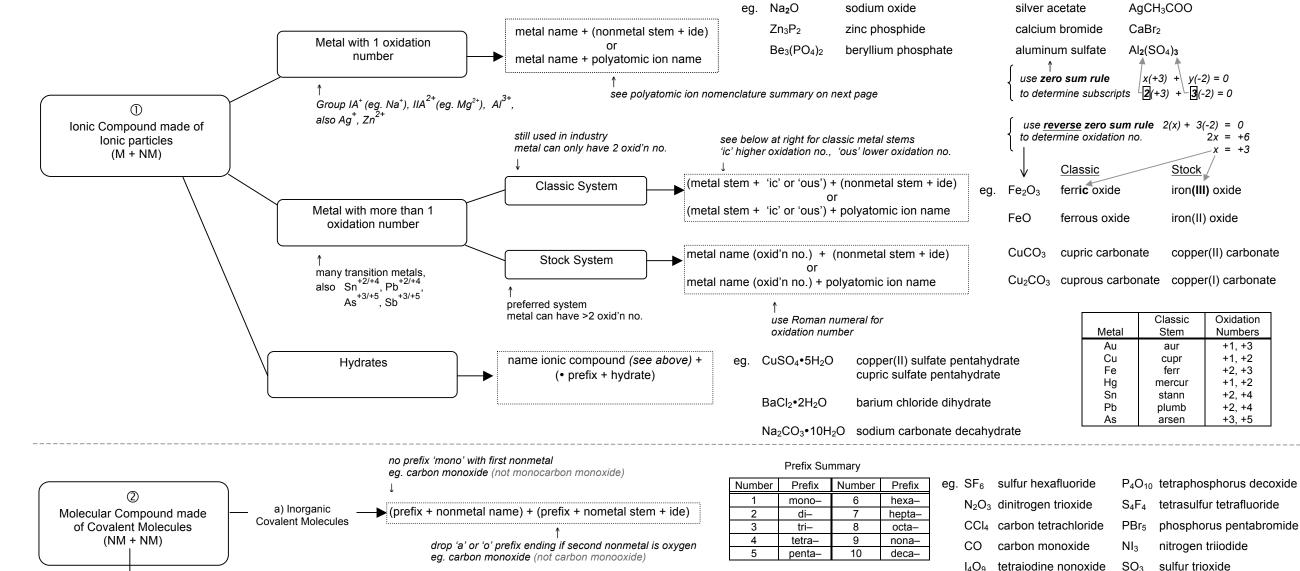


2 Major Naming Systems molecular/covalent & ionic two different ways to name the compounds









Name

pentane

hexane

heptane

octane

nonane

decane

Formula

 (C_nH_{2n+2})

CH₄

 C_2H_6

 C_3H_8

 C_4H_{10}

Name (see note to right)

methane (monane)

ethane (diane)

propane (triane)

butane (tetrane)

b) Organic

Covalent Molecules

(Hvdrocarbons: C_xH_y

Specifically Alkanes: C_nH_{2n+2})

Note: Naming of Alkanes with 1,2,3 or 4 Carbons

Formula

 (C_nH_{2n+2})

C₅H₁₂

 C_6H_{14}

 C_7H_{16}

C₈H₁₈

C₉H₂₀

 $C_{10}H_{22}$

- the first four alkane names in the series were in widespread use before the naming system was standardized
- their order can be remembered using the mnemonic sentence monkeys eat peeled bananas methane ethane propane butane

use zero sum rule

to determine subscripts

x(+1) + y(-1) = 0

1(+1) + 1(-1) = 0 not shown)

(subscript of 1

after the first 4 hydrocarbons,
 standardized prefixes are used: penta = 5, hexa = 6, hepta = 7, octa = 8, nona = 9, deca = 10

Nomenclature

1) Diatomic Molecules

A diatomic molecule is a molecule composed of two atoms of the same element. In nature, the following molecules are diatomic:

hydrogen	\rightarrow H ₂
nitrogen	$\rightarrow N_2$
oxygen	\rightarrow O_2
fluorine	\rightarrow F_2
chlorine	→ Cl ₂
bromine	\rightarrow Br ₂
iodine	$\rightarrow l_2$

So whenever you hear the name hydrogen, it would exist as H_2 .

2) Other common molecules

phosphorus $\rightarrow P_4$ sulfur $\rightarrow S_8$	glucose \rightarrow C ₆ H ₁₂ O ₆ sucrose \rightarrow C ₁₂ H ₂₂ O ₁₁	methane \rightarrow CH ₄ propane \rightarrow C ₃ H ₈
ozone \rightarrow O ₃	ammonia → NH ₃	octane → C ₈ H ₁₈
methanol → CH₃OH	ethanol → CH₃CH₂OH	he drogen >> HOD

Polyatomic Ions (or Complex Ions)

A polyatomic ion (or complex ion) is a charged particle composed of more than two atoms.

a) The "ate" polyatomic (complex) ions

phosphate	PO ₄ 3-
Borate	BO ₃ 3-
Sulfate (or sulphate)	SO ₄ 2-
chromate	CrO ₄ ²⁻
carbon ate	CO ₃ ²⁻
Nitrate	NO ₃ 1-
chlorate	CIO ₃ 1-
brom ate	BrO ₃ 1-
lod ate	1O ₃ 1-
acetate	CH ₃ COO ¹⁻
mangan ate	MnO ₃ 1-

b) The "non-ate" polyatomic (complex) ions

ammonium $\rightarrow NH_4^{1+}$

hydroxide \rightarrow OH ¹⁻