

Naming

Binary Covalent & Acids

Molecules

- _____ – two or more atoms covalently bound together
- _____ – two of the same atom bound together

Diatomic Molecules

- Br I N Cl H O F or the Magnificent 7
- These atoms never exist alone.
- They always come in pairs
- For example:
 - Br → Br₂
 - I → I₂
 - N → N₂
 - Cl → Cl₂
 - H → H₂
 - O → O₂
 - F → F₂

Binary Molecular Compounds

- Binary Compounds consist of 2

- Before you can name binary covalent compounds, you MUST know the prefixes!

Prefixes

• Mono	• 1
• Di	• 2
• Tri	• 3
• Tetra	• 4
• Penta	• 5
• Hexa	• 6
• Hepta	• 7
• Octa	• 8
• Nona	• 9
• Deca	• 10

Rules for naming Binary Covalent Compounds

- Name the _____ for the number of atoms of the first element
- Then name the first _____
- Name the _____ for the number of atoms of the second element
- Then name the _____ of the second element with the ending - _____

Note...

- No charges are used in Binary Covalent Compounds
- If the 1st prefix is mono.... _____ !
- When the prefix ends in an o or a, and the name of the element begins with a vowel, the o or a is often dropped

Examples

- What is the name of N_2O_4 ?

More examples

- Name SO_2

More examples

- Write the formula for dichlorine monoxide

More examples

- Write the formula for disulfur dichloride

Acids

- Acids can be recognized because they start with _____
- Examples
 - HCl
 - H_2SO_4
 - HI

Acids

- Acids are in _____ solution (aq)
- For the purposes of this class, we will assume that if it begins with H, we will name it according to the rules of naming acids
- If the HX were to be in a gas form, it would be named hydrogen x-ide

Rule #1 - naming acids

- If the anion ends in *-ide*, the acid will be named...
- Hydro (root) – ic acid
- This is usually for H plus one element

For example

- HCl

- HI

- H₂S

Rule #2 – naming acids

- If you have an H plus an anion ending in *-ate*, the acid will be named...
- (root) – ic acid

Examples

- H_2SO_4
- HNO_3
- H_3PO_4

Rule # 3 – naming acids

- If you have an H plus an anion ending in *-ite*, the acid will be named...
- (root) – ous acid

Examples

- H_2SO_3
- HNO_2
- H_3PO_3

Remember...

ate → ic
ite - ous



Writing formulas for acids

- When writing formulas for acids you MUST look at the charges and bring them down!

Examples

- HBr
- HClO₃

More examples

- H₂SO₃
- H₂CO₃
- HF
- Nitrous acid
- Perchloric acid
- Iodic acid
- Phosphorous acid

Mixed examples

(remember to figure out what type of compound it is 1st!)

- KClO₂
- CO₂
- H₂SO₄
- NH₄Br
- CuCO₃
- Fe₂O₃
- HClO

More Mixed Examples

- Carbon tetrachloride
- Phosphorous pentachloride
- Aluminum oxide
- Copper (II) nitrate
- Chlorous acid
- Hydrophosphoric acid
- Iron (III) hydroxide