

Lesson 8: Covalent Compound Formulas and Naming

Formulas: Binary covalent molecules

Use the prefix on each element to determine the number of atoms in the molecule.

If the first element has no prefix, assume there is just one atom of that type.

Prefixes:

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

e.g., dinitrogen tetroxide -----→ N_2O_4

Covalent molecules are NOT ionic crystals and so the number of atoms in the formula are NOT reduced.

e.g., N_2O_4 has different properties than NO_2 . They are not the same!

- Chemical formulas of binary covalent compounds indicate how many atoms of each element are present in a single molecule of the compound.
- Example: sulfur hexafluoride -----→ SF_6
- https://www.youtube.com/watch?v=picLnYDT5M0&ab_channel=DavidWilley

Practice

e.g., phosphorus pentachloride -----→ PCl_5

e.g., tricarbon octahydride -----→ C_3H_8

e.g., diphosphorus pentoxide -----→ P_2O_5

Rules for naming Covalent Molecules

1. First element is named in full with appropriate prefix (Drop **mono** for the first element)
2. The second element always ends in “ide”
3. Drop the last vowel of a prefix if the element name starts with a vowel (exception is prefixes that end in “i”).

Problems:

N_2S *dinitrogen monosulfide*

N_2O_3 *dinitrogen trioxide*

CO_2 carbon *dioxide*

CO carbon **monoxide**

N_2O_4 *dinitrogen **tetroxide***

Assignment: Lesson 8 worksheet