



# Naming Molecular Compounds

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Video Workbook with Dr. B

Molecular compounds are also  
Covalent compounds.

Non-Metal + Non-Metal = *Molecular*

Examples: CO<sub>2</sub>, CH<sub>4</sub>, O<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>O

We do not use ionic charge  
with molecular compounds!

1 H Hydrogen																	2 He Helium						
3 Li Lithium	4 Be Beryllium																	5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
11 Na Sodium	12 Mg Magnesium	Transition Metals																13 Al Aluminum	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton						
37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon						
55 Cs Cesium	56 Ba Barium	57 La Lanthanum	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon						
87 Fr Francium	88 Ra Radium	89 Ac Actinium	104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110	111	112	113	114										

## Keys for Naming Molecular Compounds

- Write the name for both elements.
- Change the ending of the second element to *ide*.
- Place prefixes in front of each element based on the number of atoms present.
- The prefix 'mono' is only used on the second non-metal in the chemical formula.

mono	di	tri	tetra	penta	hexa	hepta	octa	non	dec
1	2	3	4	5	6	7	8	9	10

There should not be two vowels in a row. For example, when you have 'mono' in front of 'oxide' it is written 'monoxide', not 'monooxide'.

Example ([video explanation](#)): Write the name for N<sub>2</sub>O<sub>4</sub>.

- We first write the names of both elements: Nitrogen and Oxygen.
- Change the ending on the second name to -ide. Here we now have Nitrogen oxide.
- Add prefixes. Since we have N<sub>2</sub> we call this Dinitrogen. Since we have O<sub>4</sub> atoms we call this tetroxide. The name for N<sub>2</sub>O<sub>4</sub> is Dinitrogen tetroxide.

Example ([video explanation](#)): Write the name for CO.

- We first write the names of both elements: Carbon and Oxygen.
- Change the ending on the second name to -ide. Here we now have Carbon oxide.
- Add prefixes. Since we start with just C we call this Carbon. Since we have one O atom we call this monoxide. The name for CO is Carbon monoxide.



Essential Video: [How to Name Molecular Compounds](#)

Practice with Video Explanations

[Interactive practice naming molecular compounds.](#)

*This is one of the most effective ways to learn naming and formula writing.*

## Formula Writing for Molecular Compounds

For molecular compounds we look at the prefixes to figure out the formulas.

### Keys to Writing Formulas for Molecular Compounds:

- Write the element symbol for both elements.
- Place a subscript after each element according to its prefix.

mono	di	tri	tetra	penta	hexa	hepta	octa	non	dec
1	2	3	4	5	6	7	8	9	10

Example ([video explanation](#)): Write the name for Dinitrogen Trioxide

- We first symbols for both elements. We have N for Nitrogen and O for Oxygen.
- Add subscripts based on prefixes. Since we have Dinitrogen, we write  $N_2$ . Since we have trioxide we write  $O_3$ .
- The formula for Dinitrogen trioxide is  $N_2O_3$ .

Example ([video explanation](#)): Write the name for Carbon tetrachloride.

- We first write the names of both elements: Carbon and Chlorine.
- Change the ending on the second name to -ide. Here we now have Carbon chloride.
- Add prefixes. Since we start with just C we call this Carbon. Since we have four Cl atoms we call this tetrachloride. The formula for Carbon tetrachloride is  $CCl_4$ .

Essential Video: [How to Formula for Molecular Compounds](#)

[Interactive practice for formula writing for molecular compounds.](#)

Report errors and suggestions to [DrB@breslyn.org](mailto:DrB@breslyn.org)

