Naming Molecular Compounds

Video Workbook with Dr. B

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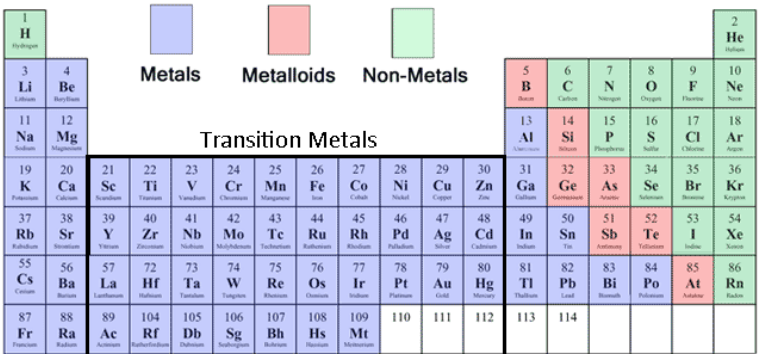
Molecular compounds are also Covalent compounds.

Non-Metal + Non-Metal = *Molecular*

Examples: CO_2, CH_4, O_2, NH_3, H_2O

We do not use ionic charge with molecular compounds!



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_2O_4.

- 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_2 we call this Dinitrogen. Since we have O_4 atoms we call this tetraoxide. The name for N_2O_4 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