

Warm Up

What is the correct name for:



Objectives

TSWBAT:

**Interpret the names and formulae
for ionic and covalent compounds.**

Naming and Writing Formulas for Molecular Compounds

- We learned earlier that binary compounds (those with 2 elements) may be ionic or covalent depending on what types of elements are in the compound.
- Two nonmetals form covalent bonds and therefore **molecular compounds**.

Molecular compounds are not as straightforward as ionic compounds because they can often combine in more than one ratio.

For example, CO and CO_2

Both molecules have C and O but they are completely different chemicals.

We need a way to name molecular compounds that tells the ratio they have combined in.

We use **prefixes** to denote how many of each element are present in a molecular compound.

So, CO_2 is carbon **dioxide**
and CO is carbon **monoxide**

Prefix	Mono	Di-	Tri-	Tetra-	Penta-
Number	1	2	3	4	5

Prefix	Hexa-	Hepta-	Octa-	Nona-	Deca-
Number	6	7	8	9	10

Here are the rules:

1. If there is only one atom of the first element in a compound, we do NOT use mono. That is only for the second element.

CO carbon monoxide

NOT ~~monocarbon~~ monoxide

2. Any molecular compound with no prefixes means there is only one atom of each element in the formula.

e.g. silicon carbide = SiC

Will NOT ask this!

Warm Up (Name these):

SF_6  sulfur hexafluoride

Cl_2O_8  dichlorine octoxide

N_2O  dinitrogen monoxide

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What is the atomic symbol of lead-208?

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Warm Up

Write the formulas for the following:

beryllium phosphide

dichlorine heptaoxide

Name the following:



Warm Up:

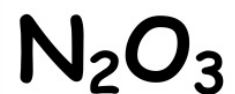
**What is the formula for
dinitrogen tetraoxide?**

Textbook practice:

p. 270 #22-25

Warm Up

Name the following compounds:



Naming Acids

An acid is a compound that produces **hydrogen ions (H^+)** when dissolved in **water**.

When naming an acid you can consider the acid to consist of an anion and as many hydrogen ions (H^+) as needed to make the molecule electrically neutral.

General formula: H_nX

where X = monoatomic or polyatomic anion
 n = number of hydrogens combined with the anion

Table 9.5**Naming Common Acids**

Anion ending	Example	Acid name	Example
<i>-ide</i>	chloride, Cl^-	<i>hydro-(stem)-ic acid</i>	<i>hydrochloric acid</i>
<i>-ite</i>	sulfite, SO_3^{2-}	<i>(stem)-ous acid</i>	<i>sulfurous acid</i>
<i>-ate</i>	nitrate, NO_3^-	<i>(stem)-ic acid</i>	<i>nitric acid</i>

Three rules for naming acids

1. When the anion ends in "-ide" the name of the acid starts with "hydro." We add "-ic" to the **stem name** of the anion. Then we add the word "acid."

Example:



Cl is chloride, so this is "hydro**chloric** acid."