Name: _____ **Date:** _____ **Class Notes**
Chemistry

Writing Chemical Formulas

One of the greatest developments in science was the creation of the periodic table. It is a specific arrangement of the elements **names**, chemical **symbols** and **atomic** numbers. The creation of chemical symbols allows the chemist to write chemical formulas for compounds. Writing chemical formulas is a very important **skill** that you must learn in order to interpret **word problems** into chemical equations and perform stoichiometric calculations. Since writing formulas is a skill, anyone can master it with practice. So, **practice!**

What is a chemical symbol?

_____

What is a chemical formula?

_____

General Rule

_____

_____

Formula Anatomy

A chemical formula tells you the **elements** involved; the **number** of atoms or ions of each element and the number of **molecules** or formula units.

$2\ CaF_2$

Writing Ionic Formulas

When writing the chemical formula for **ionic** compounds put the **cation** first followed by the **anion** and use subscripts to indicate the number of each ion present.

- Remember the **algebraic sum** of the oxidation numbers must **equal zero**.
- Learn the polyatomic ions.
- Learn how to find charges using the periodic table
- Learn the metals with multiple oxidation numbers.

Example:

lithium nitrate	$(Li^+) + (NO_3^-)$	$(+1) + (-1) = 0$	$\therefore$ _____
calcium chloride	$(Ca^{2+}) + (Cl^-)$ $(Ca^{2+}) + 2\ (Cl^-)$	$(+2) + (-1) \neq 0$ $(+2) + 2\ (-1) = 0$	$\therefore$ _____
iron(III) hydroxide	$(Fe^{3+}) + (OH^-)$ $(Fe^{3+}) + 3\ (Cl^-)$	$(+3) + (-1) \neq 0$ $(+3) + (-3) = 0$	$\therefore$ _____

Writing Molecular Formulas (covalent)

When writing the chemical formulas for **molecular** compounds put the **least electronegative** element **first** followed by the **more electronegative** element and use subscripts to indicate the number of each atom present.

- Learn the Greek and Latin numeric prefixes.
- Mono is usually dropped except in carbon monoxide.
- Some compounds have common names.

Example:

carbon dioxide	(1C) (2O)	∴ _____
phosphorus pentachloride	(1P) (5Cl)	∴ _____
dinitrogen tetroxide	(2N) (4O)	∴ _____

Notes:

PRACTICE

Write proper formula for the following compounds.

_____ sulfur dioxide

_____ calcium hydride

_____ aluminum acetate

_____ lead (IV) chloride

_____ sodium phospate

"Don't ask for things to get better, ask that YOU get better."
-- Jim Rohn

HOMEWORK

Directions: Write proper formula for the following compounds.

_____ dinitrogen monoxide

_____ lead(II) sulfide

_____ silicon dioxide

_____ ammonium carbonate

_____ potassium dichromate

_____ sodium peroxide

_____ mercury(II) bromide

_____ magnesium acetate

_____ sulfur difluoride

_____ nitrogen dioxide

_____ potassium sulfate

_____ aluminum hydroxide

_____ magnesium nitride

_____ sulfur trioxide

_____ tin(II) nitrate

_____ aluminum chlorate

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