

## Nomenclature of Binary Ionic Compounds

### Rules

#### I. Metal Having a Single Common Oxidation State with a Non-Metal

- Name the Metal first.
- Name the Non-Metal second; using an *-ide* ending.

Ex:  $\text{MgCl}_2$   
Magnesium Chloride

#### II. Metal Having Multiple Common Oxidation States with a Non-Metal

- As before, except the Metal's oxidation state is indicated according to:

##### Classical System

Add a suffix of *-ous* if the metal is in its lower common oxidation state. Add a suffix of *-ic* if it is in its higher common oxidation state. Use the element's Latin name if appropriate; except for Mercury.

Ex:	$\text{CuCl}$	$\text{CuCl}_2$
	Cuprous Chloride	Cupric Chloride

##### Systematic System

Add the oxidation state using a Roman numeral bracketed by parentheses.

Ex:	$\text{CuCl}$	$\text{CuCl}_2$
	Copper (I) Chloride	Copper (II) Chloride

#### III. Polyatomic Ions

- Many of the above rules are useful when dealing with compounds of polyatomic ions.

Ex:  $\text{Cu}_2\text{SO}_4$   
Cuprous Sulfate *or* Copper (I) Sulfate

## Conventions

(-ide) Endings for the Non-Metals

<u>Group 4A</u>	<u>Group 5A</u>	<u>Group 6A</u>	<u>Group 7A</u>
Carbide	Nitride	Oxide	Fluoride
	Phosphide	Sulfide	Chloride
	Arsenide	Selenide	Bromide
		Telluride	Iodide