

# CHEMICAL FORMULAS AND NAMING IONIC COMPOUNDS



# Chemical Formulas

- A **chemical formula** is a shorthand way of telling you
  - The **name** of a compound
  - What **type** of **atoms** are in the compound
  - **How many** of each element there are

# How to read a formula

- A chemical formula uses
  - **symbols** for each element
  - **subscripts** to tell you how many of each element there are.

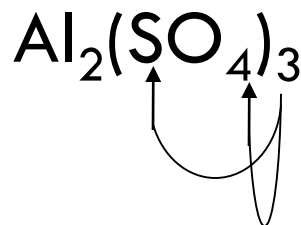
Example:

- If there is no subscript, you assume there is a “1” as the subscript (but you just don’t write it in).  $N_1H_4$

# What's with the parentheses?

- If a chemical formula has **parentheses** in it then you have to remember to **distribute** the subscript to each element inside the parentheses.

Example:



There are Aluminum atoms

Sulfur atoms

Oxygen atoms

# Practice Questions



Ca =            Br =



Cu =            N =                    O =

# Naming Ionic Compounds

- Two types of ionic compounds

- **BINARY**

- Only TWO types of elements



- **POLYATOMIC**

- MORE than two types of elements



# Naming Binary Compounds

- Cation first, Anion Second
- Metal first, Non-metal Second
- IGNORE THE SUBSCRIPTS!
- Transition metals with more than one possible charge put the charge in parentheses with roman numerals Mn(IV)
  
- Cation – same name as on periodic table
- Anion – drop the ending and add -ide

NaCl

# Practice Naming Binary Compounds

□ AgCl

□ MgO

□ KS



# Naming Polyatomic Ionic Compounds

- Cation First, Anion Second
- Both Cation and Anion keep their normal name
- $\text{Mg}(\text{OH})_2$
- $(\text{NH}_4)(\text{NO}_3)$

# Practice Naming Ionic Compounds

