

# 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.

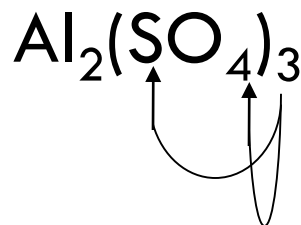
Example:

- 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





# Practice Naming Ionic Compounds



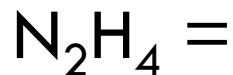
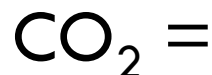
# NAMING COVALENT MOLECULES



# JUST like ionic, but use prefixes

# of atoms	Prefix
1	mono-
2	di-
3	tri-
4	tetra-
5	penta-
6	hexa-
7	hepta-
8	octa-
9	nona-
10	deca-

Put a prefix in front of the ion name (except if it is mono- for the first element, then just leave it off)



# Weird naming with double vowels

- When (ao) or (oo) bump up against each other drop the first one
  - NOT decAOxide ---- decoxide
  - NOT monOOxide ---- monoxide
  - NOT pentAOxide ---- pentoxide
- Hexaiodide is correct!!!
- Diiodide is correct!!!
- Dioxide is correct!!!
- Trioxide is correct!!!